

CAMPUS PARK PROJECT

APPENDIX J

CONCEPTUAL FIRE PROTECTION PLAN/ FUEL MODIFICATION PLAN

SPA 03-008, GPA 03-004, R03-014, VTM 5338 RPL6,
S 07-030, S 07-031, LOG No. 03-02-059, SCH No. 2005011092

for the

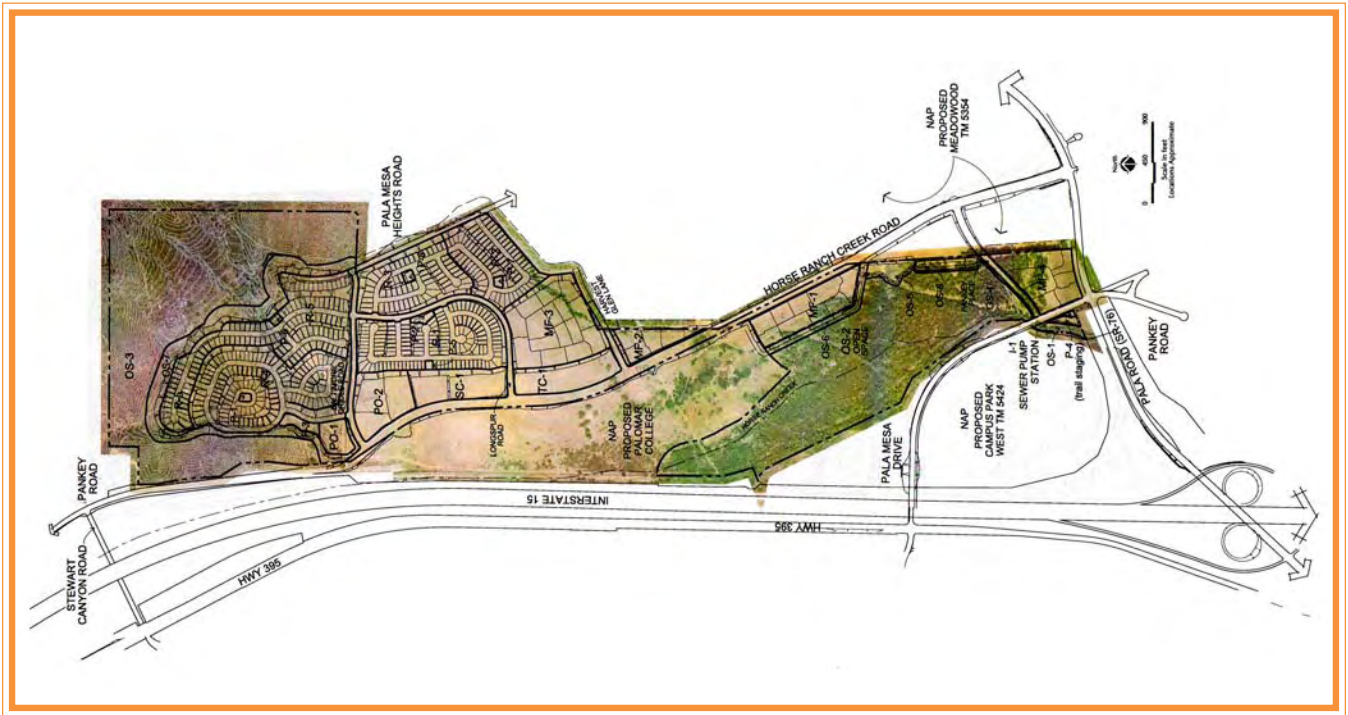
DRAFT SUBSEQUENT ENVIRONMENTAL IMPACT REPORT

SEPTEMBER 2009

Conceptual

Fire Protection Plan/ Fuel Modification Plan for Campus Park Tract 5338 RPL-6

Fallbrook, California



October, 2005

Revised September, 2006

Revised April, 2007

Revised June, 2008

Revised April, 2009

Revised September, 2009

by

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CAMPUS PARK FIRE PROTECTION PLAN
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1.INTRODUCTION/ SCOPE

This is the Conceptual Fire Protection/ Fuel Modification Plan for the Campus Park development, Tract 5338 RPL 6, in Fallbrook California. This development, of 416.1 acres, includes a total of 1,076 residential units, including 521 detached single-family dwellings on lots ranging from 4,000 to 5,000 square feet, and 555 multi family dwellings in 4 planning areas, commercial Town Center, 2 professional office areas, parks, sports complex, Homeowners Association (HOA) recreational complex, sewer pump station, and open space. There may be a Transit Center offsite at Palomar College, which is not a part of this project. The proposed development is located North of Highway 76 and East of the I-15, in the unincorporated area of Fallbrook. The project runs north from the 76 to Stewart Canyon Road. The development is east of the Pala Mesa Resort and east of the I-15. The Fire Jurisdiction is the North County Fire Protection District. The San Diego County Thomas Guide Page numbers are 1048-J-1 and 1028-H-J, 5-7. This development will take access from a new road called Horse Ranch Creek Road and from Pala Mesa Drive. Both will connect to Highway 76. On the West end the development will provide access from Pala Mesa Drive on the West side of the I-15 at Old Highway 395 which will connect to Horse Ranch Creek Road and to SR-76. On the Northwest end, the development will connect to Stewart Canyon Road, which will provide a connection to Old Highway 395 West of the I-15. Refer to the drawings in Appendix of this plan.

The Assessor Parcel numbers are:

108-120-56-00
108-120-57-00
108-120-58-00
108-120-59-00
108-121-13-00
108-121-17-00
108-421-03-00
108-421-04-00
125-061-02-00
125-061-03-00

Palomar College will have land for a campus adjoining this development between the I-15 and Horse Ranch Creek Road. It is not a part of this development.

This conceptual plan, originally prepared in 2005, has been updated in 2006, 2007, 2008, 4-30-2009, and on this date based on Fire District and County DPLU Fire Marshal comments. This plan, as updated, demonstrates compliance of the development with the Fire District requirements. It also demonstrates compliance with the 2007 County Fire Code, which requires a Fire Protection Plan for any new development in the Wildland Urban Interface. This plan is authored by Jim Hunt; Hunt Research Corporation, hereafter referred to as "consultant". Fire Spread modeling was done by Scott Franklin. Numerous

consultant recommendations and the Fire Authority requirements herein are phrased as “shalls” so that when the plan is approved, it will be enforceable as requirements by the Fire District and the DPLU. Any recommendations listed as “shoulds” become “shalls” after Fire District and DPLU Fire Marshal approval. This edition and previous editions of this plan were approved by the North County Fire Protection District, on 10-12-05, 10-26-06, their letter of 9-25-08, regarding the plan submitted 8-08, with comments that have been addressed herein, and their approval letter dated 9-9-09 approving the 4-30-09 edition. Refer to the approval letter in the Appendix of this plan. The DPLU Fire Marshal has reviewed and commented on previous editions of this plan. Changes were made in this plan to reflect relocation of certain developed areas due to biological issues. Such relocations moved the developed areas further away from the worst-case fire threat on the Northeast. Other minor enhancements were included to further improve fire protection. The industrial lots have been removed.

In the latest letter from the San Diego County Fire Authority/ DPLU Fire Marshal dated 7-9-09, the Fire Marshal has determined that the travel time to lot 451 is 5.13 minutes and that this time is generally consistent with the General Plan Public Facilities Element requirements. Refer to the DPLU letter in Appendix of this plan.

Since the last revision, new Fire and Building Codes were adopted by the State, the County, and the Fire District. Therefore, certain sections of this revised plan have been changed, where deemed necessary by the author, to reflect the latest applicable WUI related Code requirements.

2.PROJECT DESCRIPTION:

The development includes the following products:

Type of Product	Number	Individual Lot size or number	Total Acres
Detached single family homes	136	40X100'	23.4
Detached single family homes	197	45X100'	46.5
Detached single family homes	188	50X100'	43.6
Total units and acreage for single family detached	521		113.5
Multi family dwellings	555	4 lots	45.4
Town Center commercial	1 center	1 lot	8.1
Professional Offices	2 sites	4 lots	11.5 acres
Parks	8 sites	8	3.7
Sports complex	1	1	8.5

Sewer pump station	1		0.2
Open space	8 lots	203.5 acres	203.5
Roads			23.8
Total residences	1,076		416.1

Note: Palomar College may have a Transit Center, which is not a part of this project.

The pads, which will be built upon, are relatively flat. There are mountains offsite to the east and the north. There are also riparian zones on the site. It adjoins Rancho Monserate, which is east and north of the property, north of the 76. Currently there is a model airplane-flying site adjacent to the property. Existing ranches adjoin the property on the East and North sides. The site includes biological open space areas. The Horse Ranch Creek flood plain also adjoins the property on the west, between the property and the I-15, north of the 76.

Detailed plans for all occupancies including the sports complex and the sewer pump station will be submitted as detailed plans are developed prior to construction.

3. FIRE DISTRICT RESPONSE:

The closest Fire Station is North County Fire Protection District Station 4, at 4375 Pala Mesa, off old Highway 395. This station has an Engine company and a Paramedic Ambulance. The staffing is 5. Distance from Station #4 to the furthest occupancy was calculated by the San Diego County Fire Authority/ Department of Planning and Land use Fire Marshal using a route which goes north on Old Highway 395 to Stewart Canyon at 45 MPH, then 35 MPH for the remainder of the response to lot 451. The Fire Marshal found the travel time to lot 451 to be 5.13 minutes which that office considers generally consistent with the General Plan Public Facilities Element requirements (when those roads are completed). Refer to the Fire Marshal's letter in the Appendix of this plan.

Response to a structure fire requires 2 Engine companies, a ladder truck, and a Battalion Chief. The Ladder truck comes from the Pala Reservation. This is not a guaranteed response, if there is a fire at the Reservation or if the apparatus is in use elsewhere. The North County Fire Protection District does not have an Aerial Ladder truck. An Aerial Ladder truck and crew may be needed on scene for an effective fire attack at a commercial building fire or a fire in multiple attached family units. The next closest ladder truck is in Vista.

The tallest building will be a professional office building, which is proposed to be 35 feet high from accessible grade. The Fire District states they cannot access a roof or window over 30 feet high due to lack of an Aerial Ladder truck. Therefore, the Fire District may be required to upgrade the type of Fire District apparatus inventory to include an Aerial Ladder Truck and also modify the Apparatus Bay at the Fire Station if necessary, to house an Aerial Ladder Truck. Due to the cost of such upgrades, the upgrades should be done in conjunction with several other projects proposed in the Fire District, as the apparatus would also respond to other occupancies. One development should not be required to pay the full amount. Several developments in the area will be required to upgrade various improvements with the Fire District. Prior to final map an agreement to

provide these facilities and equipment shall be in place for required improvements. Such fair-share funding for upgrades would be provided after final project approval and prior to occupancy of first structure over 30 feet high from accessible grade.

Total personnel on scene would be approximately 10 firefighters plus the Battalion Chief. Total response time would be about 15 minutes. Response to a vegetation fire would be 4 Engine Companies and a Battalion Chief, for a total of 13 firefighters. The travel time would be about 15 minutes. The California Department of Forestry (CALFIRE) would also respond depending upon the size of the fire and the threat.

4.FIRE RISK ASSESSMENT

The consultant and the fire-spread modeler, Scott Franklin, inspected the site. The property is surrounded by Riparian zones, open space, Highway 76, Interstate 15, and by ranches and mountains to the East and North. Scott Franklin generated BEHAVE models for the site.

The types of vegetation on site include:

- Southern Riparian forest
- Southern Willow scrub
- Oak Woodland
- Freshwater Marsh
- Diegan Coastal Sage Scrub
- Coyote Brush
- Non native grassland
- Ornamental trees
- Eucalyptus woodland

Offsite, Northeast of the development, is a mountain, which has old age class coastal sage scrub on it. For purposes of conservative fire spread modeling, this was considered a Fuel Model 4, similar to chaparral.

The on site inspections conducted by consultant result in the opinion that the area is in a Wildland Urban Interface fire hazard area which is susceptible to a fire burning on to, or spotting on to the site from the north and the east, or from a fire beginning adjacent to the freeway, west of the tract, or in dry or flammable vegetation in open space and riparian zones around the tract.

The worst-case fire would occur under “Santa Ana” wind conditions after several days of protracted hot weather and hot dry winds. Fires occurring elsewhere can spot into this development due to airborne burning debris, and ignite on site fires. The onsite fire would most likely come from the Northeast down the offsite hillside and onto the property. A summer fire involves a sub tropical high aloft with elevated air temperatures; a phenomena similar to Santa Ana conditions. Therefore, one purpose of this plan is to provide proper fuel modification on private lots so that such spread or spotting does not

ignite vegetation. Fire can also start in vegetation surrounding the site due to careless hikers, arsonists, vehicle fires, or illegal use of off road vehicles. Therefore, adequate fuel modification is also recommended in this plan, in order to slow down or stop fire spread from adjoining vegetation.

FIRE HISTORY

The Rice Fire burned over portions of the site starting on October 22, 2007. A Fire District Division Chief indicated that, regarding the hill on the Northeast corner of the project, when the wind was in alignment with the slope, estimated flame lengths were 100 feet mainly on North facing slopes, which had heavier fuels. The wind direction was northeast. When the fire was slope driven (western facing slopes) estimated flame lengths were around 50-60 feet. Except when it ran into more heavily vegetated slopes (then they were closer to 70-80 feet). The Western slopes, which would be interpreted as facing this site, had a much higher Coastal Sage component. The fire behavior experienced in the fire validates the recommendations in this plan for the various sizes of Fuel Modification Zones. Worst-case models previously generated for this plan estimated flame lengths at 81 feet, which is extremely close (1 foot difference) to the flame lengths reported for the Rice Fire. See the information below.

FIRE BEHAVIOR CALCULATIONS

Fire behavior calculations were generated for this site. The weather data utilized for the models was based upon worst-case onsite weather conditions. Data was obtained from the Western Regional Climate Center in Vista. Extreme maximum temperature in July was recorded as 110 degrees f. The average maximum temperature in July-September was 85 degrees. Extreme maximum temperature in late August-October was 105 degrees. This site will be a little hotter as it's more inland. Fire Spread models were generated for a summer fire, and a fall "Cedar" Fire worst-case conditions. However, the winds used in the models were 50 mph at 20' rather than the 20 to 40 mph experienced in the Cedar Fire, in order to evaluate the worst-case scenario. It was found that the weather conditions for a fall, Cedar type, fire, but with higher winds, represented the worst-case scenario.

(Note models have not been updated for this revision of the plan as it is felt that the models, which are estimates only, have validated the recommendations in this plan based on information received from the Fire District regarding the Rice Fire. Note that per the AMMO DUMP RAWS site the maximum temperature on the date of the fire, 10-22-07, was 85 degrees. Fuel moisture was 6.7%. RH was 4%. Wind was up to 49 MPH. The models done for this plan provided a case worse than these inputs (see below tables).

BEHAVE Fire Spread models:

BEHAVE Fire Spread models were generated for this site by Scott Franklin; Scott Franklin Consulting Co. The models used were the BEHAVE PLUS 3.0.1 SH-7 shrub model for 6' high shrubs at about 14.4 tons/acre, Fuel model 3 for grass 3' high, and Fuel Model 4; Heavy chaparral, 6' high (offsite mountain). Models are guidelines and

estimates only and should only be used by those experienced in Fire Behavior and BEHAVE modeling, in addition to judgments re the on site risk.

Inputs to models:

Input	Summer Fire	Cedar (October) Fire with increased wind
1 hour fuel moisture	2%	2%
10 hour fuel moisture	2%	2%
100 hour fuel moisture	3%	2%
Live woody moisture	80%	60 %
20' wind speed	20 mph	50 mph
Air temperature	100 degrees f	95 degrees f
Slope	0	0

Outputs from models:

FM-3; Grass 3' high

Output	Summer Fire	Cedar (October) Fire with increased wind
Flame length	21'	36 '
Rate of Spread	2.8 mph	9 mph
Spotting distance	0.8 miles	2.1 miles

FM-4: 6' high Chaparral (Mountain in Northeast corner of property)

Output	Summer Fire	Cedar Fire with increased wind
Flame length	40.0'	81'
Rate of spread	3.6 mph	16 mph
Spotting distance	1.2 miles	3.7 miles

FM sh-7: Heavy shrub:

Output	Summer Fire	Cedar Fire with increased wind
Flame length	24'	44'
Rate of spread	1.4 mph	5.2 mph
Spotting distance	0.8 miles	2.4 miles

The worst-case model is the Cedar Fire involving a fire on the mountain on the Northeast, burning towards the site, with winds, which were higher than the actual Cedar fire. The mountain did burn in the Rice Fire and validated the recommendations in this plan. The worst case estimated fire on site is in the fall in the heavy fuel/ shrubs.

5. VEGETATION MANAGEMENT (FUEL MODIFICATION) ZONES:

As a result of the Fire Risk Assessment, fire spread models, and the recommendations of the consultant, the following Fuel Modification Zones (FMZ) shall be provided. Lot numbers are approximate and subject to change. Refer to Fuel Modification Zone drawing in Appendix. Fuel Modification Zone measurements begin on all sides of a structure.

- North and east end of development (detached residential area): Lots 170 north to lot 400 and lot 416 to lot 451; 200' fuel modification zones (on north and east perimeter of detached SFD lots).
- Lot 452 west and south to Lot 367, lots 569 and 563; 125' (on west side of detached SFD lots).
- On Southeast side, Lot 171 to 187 and along the Multi Family (MF) attached units; Multi family lots 3 and 2, with the following lot numbers: 534-535-537, "F" and 547-549,550, 551 on southeast side of detached SFD area; 125'. Note: Pardee Homes may build a development adjacent to the property line on the southeast. This would result in removal of the current grove, and any other flammable vegetation on the Pardee site, and it is assumed the Pardee development would have fuel modification requirements similar to this development, and abutting a fuel modification zone in this area of this development. Any offsite Fuel Modification done by this development requires approved written permission of the offsite landowner and any heirs or purchasers of the property. Some Fuel modification on the east will be offsite. Campus Park developers will require an official agreement with Pardee Homes for the offsite fuel modification.
- Multi Family lots MF-1 (MF-1 includes lots 522,527,531) 100'. Provide 125' on east, east of Horse Ranch Creek Road, unless the future offsite abutting tract is built and has approved and proper fuel modification zones directly abutting the zones in this tract.
- MF-4 (lots 552-561, and lot 577; provide 100; Fuel Modification Zones.
- The balance of the development, for all occupancies, and including any lots bordering natural open space areas, flammable vegetation, and parks and Sports Complex (if not properly landscaped), Town Center, Professional Offices 1 and 2, etc.; 100'.
- There may be a future adjoining offsite development and the Fuel Modification Zones may then abut one another. Sewer lift station to have 100' FMZ.
- All internal lots in the development, which do not adjoin offsite areas, perimeters or open space, including all internal residential lots, must also have fuel

modification zones. They are required to be 100' from structure, or to the private lot line whichever is less.

Summary of recommended Fuel Modification Zones. Vegetation types verified by applicant. Note that lot numbers and designations could change in the future in various areas. Refer to Fuel Modification Zone drawing in Appendix, which shows locations and sizes of zones.

Current approximate lot numbers; starting and ending:	Perimeter location	Type of vegetation	Estimated Flame lengths per model	Fuel Modification Zone size
170-400 and 416-451	North and East side	Chaparrals	81'	200'
171 past 187 and along Multi Family lots (MF), (lots 534, to 537, "F", 525,547, 549,550, 551,	Southeast side	Groves; future tract	36-44'	125' Unless future offsite tract has proper abutting FMZ
452 South and West to 367. lots 569 and 563.	West side of detached SFD. North of Baltimore Oriole Rd	Biological open space, grass, shrubs, etc	36-44'	125'
All interior lots	SFD/MFD	Private lot landscaping	Varies	100' or to private lot line
Lot 522, lot 527-531, 552 to 561, 577.	Refer to map; East, West, and South perimeters	Varies	36-44'	100'. 125' on South and East sides of MF-1-2-3 unless adjoining offsite tract built with proper fuel mod abutting this tract.

(Fuel Modification Zones are measured on a horizontal (plan view) plane from the structure or projection from structure on all sides). Note; As lot numbers may change, revised numbers will be shown on final map and the Fuel Modification zone sizes in

9-1-06: Conceptual Fire Protection Plan; Campus Park Development; Fallbrook, by Hunt Research Corporation (revised 3-12-07, 6-18-08, 4-30-09, 9-14-09

above table, and as shown in the Conceptual Fuel Management Plan drawing, dated 3-30-09, in Appendix, will apply to the new lot numbers in those locations.

FUEL MODIFICATION ZONES (Zones apply to all types of occupancies in this development). **NOTE THAT THE FIRE DISTRICT LETTER REQUIRES COMPLETE CLEARING OF NATIVE SPECIES, EXCLUDING ISOLATED SINGLE SPECIES, IN THE FIRST 100' FROM STRUCTURES:**

Zone A; "Defensible Space Zone"; 50' on all sides of all structures (or out to private lot line if less) in all areas of the development including internal lots.

This defensible space is an irrigated, maintained, wet zone. No flammable or combustible growth. No dead or dying vegetation. There shall be no vegetation within 10' of any chimney. No tree canopies within 15' of structures. Trees to be 20' between mature canopies. Examples of a tree allowed beyond 15' is a single well spaced and maintained specimen of Coastal Live Oak, sycamore, maple, elm, cottonwood, willow or jacaranda. The first 50' from the structure shall consist of well irrigated, well spaced, Fire Department approved, low fuel volume, high fuel moisture, drought tolerant, low profile (less than 4" in height) fire resistive groundcover or lawn. Fire resistive shrubs, bedding plants and flowers, may be planted, to a height of 18" (12" within 10' of structure). Spacing between mature shrubs, and between mature plants, should be 2 times height on slopes less than 20%, 4 times height on slopes 21-40%, and 6 times height on slopes over 40%. Shrubs shall be located away from tree drip lines. No flammable understory allowed under trees. Any fire resistive vegetation under trees should be low growing and mature height to be 1/3 height of the canopy, or 12" max whichever is less, in order to prevent any fire laddering.

Any single specimen of approved trees or shrubs must be properly located, spaced, limbed and pruned to a height of 6' from the adjacent ground.

No dry grasses, acacia, eucalyptus, palm, juniper, cypress, pine (conifers), olive, pepper, camphor, deodar cedar, bottlebrush, pampas grass, chaparral, sage including purple sage, sagebrush, coyote bush, salvia spp, chamise, California buckwheat or manzanita. See additional prohibited vegetation in the "Prohibited Plant Materials" list in Section 6 of this plan. The objective is to prevent spread of fire to or from a structure. It is extremely critical to keep flammable vegetation and ornamental vegetation away from the structure so as to prevent a path for fire to reach the structure. No chipped biomass or wood bark within 30' of structures. No mulch within 12" of structure. The Fire District requires removal of all native species, except single, isolated, species, in the first 100' of the Fuel Modification Zone.

No firewood or LPG tanks within 30' of a structure or within 15' of the crown of a tree. No plastic trash cans in this Zone. No Palapas or Jungle Gyms in this zone No plants under windows or vents. Locate outbuildings 30' away from main structure.

Zone B: from private lot line (if less than 50'), or from 51', out to 100' from all sides of structures in all areas of the development including internal lots:

This Zone is a non-irrigated zone of low volume, fire resistive, drought tolerant, low profile fuel (native grasses less than 3"). Fire resistive groundcover less than 4" in height, and fire resistive shrubs and trees. It may also include certain properly mowed, thinned, limbed, pruned and spaced natural existing vegetation with the exception of that vegetation which is prohibited in this plan. No dry grass is allowed. This zone is to be maintained by the Homeowners Association (HOA), where beyond the private homeowner lot line. Irrigation may be needed for various plants, and at time of planting (to be determined by Landscape Architect keeping in mind that there could be future prohibitions against irrigation in communities due to water shortages.)

Trees must be properly limbed up (6' from adjacent ground), dead or dying fuels removed, flammable understory removed. Any fire resistive shrubs under trees to be limited to same height as in the Defensible Space Zone. Specimens of approved and properly maintained trees such as coastal live oak, sycamore, maple, elm, cottonwood, willow, jacaranda or other high leaf moisture/ low oil content trees may be used. Trees to be 20' between mature canopies. However, groups of 2-3 approved, fire resistive trees in a cluster, are allowed provided there is 20' provided between mature canopies of these clusters and that there is no flammable understory vegetation, and that the understory is maintained on an ongoing basis. Coastal Live Oak trees are recommended. No acacia, eucalyptus, palm, juniper, pepper, olive, bottlebrush, cypress, pine (conifer), deodar cedar or pampas grass. No dry grass, chaparral, sage, including purple sage, coyote bush, chamise, salvia spp, sagebrush, California buckwheat, or manzanita. See additional list of prohibited vegetation in the "Prohibited Plant Material" list in Section 6 of this plan. Approved fire resistive shrubs and plants may be used as in the Defensible Space Zone if kept below 24" in height, mature canopies spaced 5' apart, and kept free of all dead fuel. Fire District requires removal of all native species, except single, isolated specimens, in the first 100' of the Fuel Modification Zone.

The objective is to reduce flammable vegetation, reduce the potential for fire to spread to trees from vegetation on the ground, reduce potential for fire to spread to and through vegetation and then to the structure, and to preclude invasion of highly flammable exotic vegetation. Any shrubs or trees must be properly spaced, limbed and pruned and have all dead material removed.

Areas within this zone are to be kept free of all exotics and flammable vegetation, including those identified in this plan. Vegetation also includes flammable trees, including the type identified in this plan. Grasses and weeds are to be kept mowed to 3" throughout the zone. Break up masses of vegetation; especially large trees and shrubs.

ZONE C: Non Irrigated Zone From 101' out to prescribed distances shown on the Fuel Management Zone dwg in the Appendix and the wording and Table in Section

5 of this plan; 200' on north and east sides of development, 125' for lots on west side from the north end south to Baltimore Oriole Road, 100' on the remainder of the west side, 125' for lots on portions of the east and southeast sides and areas east of Horse Ranch Creek Road (unless adjacent development has acceptable abutting offsite fuel modification), and 100' for all other lots; including residential, office, commercial, etc., and the sewer pump station.. See drawing in Appendix for details. On site zone sizes may abut approved offsite FMZ in future tracts, and future college campus.

If new planting is done, irrigation may be needed throughout the zone. Actual irrigation needs to be determined by Landscape Architect keeping in mind that future prohibitions against irrigation could be imposed in communities due to water shortages. In Zone C significantly separate, thin, limb up and prune all flammable vegetation. Break up any continuous fuel beds. Remove all dead fuel from vegetation, and limb up trees to 6 feet from adjacent ground, all of which will break the contact between ground and aerial fuels (remove ladder fuels). Provide 25 feet between large shrubs and tree groupings. Shrubs, plants and bushes to be less than 2' high and spaced 5' between mature canopies. Shrubs beyond 150' to be less than 3' in height and spaced 15' between mature canopies. Trees to be spaced 30 feet between mature canopies. However, groups of 2-3 approved, fire resistive, trees in a cluster, are allowed provided there is 30' between the mature canopies of these clusters and that the understory under trees is not flammable and is maintained on an ongoing basis. Coastal Live Oak trees are recommended. No trees allowed beyond 150' unless native Coastal Live oaks or Sycamore. Break up mature tree canopies in order to create adequate separation between mature tree canopies. Any trees may need to be irrigated. No chaparral, chamise, sage, salvia spp, sagebrush, coyote bush, dry grass, California buckwheat, manzanita, pine, conifers including cedar, acacia, cypress, juniper, eucalyptus, pepper, palm, camphor, bottlebrush, or pampas grass shall be utilized in Zone C. No vegetation from the Undesirable Plant List in Section 6 of this plan. Some isolated, single, specimens of certain types of natural vegetation may remain if properly spaced and maintained (properly spaced mosaics may be created) with no dead fuel component. Separate any mosaics of flammable brush. Remove all thinned, pruned, and dead debris from the property. Mow or weed whack grasses to 4 inches. No ground cover over 4 inches high. A certain amount of naturally occurring vegetation in Zone C may be needed to help maintain erosion control, soil, and slope stability, but must be thinned, modified, kept to a low height, well spaced, and maintained. Fire District requires removal of all native species, except single, isolated, specimens, in the first 100' of the fuel modification zone.

There shall also be a 100-foot vegetation management zone around all edges of any parks and sports complex (unless properly landscaped and irrigated), around, but outside of, any biological open space areas, or areas of unmodified natural vegetation on interior of development, retention basins, and flood control areas, where these areas are adjacent to structures. Any flood control retention basin shall have all flammable vegetation removed. Such basin shall have fire resistive groundcover as needed for erosion control. The Flood Control District shall maintain any retention basin. There shall be 30' vegetation management zones around any power line or pipeline easements.

Any vegetation, including trees, in the Parks and Sports Complex, shall comply with the criteria for fuel modification zones in this plan. No vegetation from prohibited plant list in this plan, or as prohibited in the fuel modification zones, is allowed.

Fuel Modification on lots, where Zones extend beyond the private property line, shall be assured by a legally constituted HOA, must comply with the guidelines in this plan on an ongoing basis, and must be monitored by the Fire District. Private lot owners shall be put on legal notices via CC and R's and Deed Encumbrances that they are responsible to comply with this plan on their private lots. The HOA shall assure compliance.

If the prescribed size of Vegetation Management Zones cannot be accomplished or guaranteed on private perimeter lots, then there shall be a common Vegetation Management Zone outside of the private lots on perimeter, which is controlled by, and maintenance is guaranteed by, the HOA.

If offsite Fuel modification is needed, in order to comply with this plan, there must be a legal, written agreement between this development and the adjoining offsite property owner, allowing such ongoing Fuel Modification.

In addition, vegetation management is needed on each side of all roads and trails on the perimeters of any tract or area (and any internal area which is exposed to natural and/or flammable vegetation). A minimum of 30 feet clearance of flammable vegetation shall be provided along sides of onsite roads, as required by the Fire Code, and 10' on sides of trails. Vegetation management along sides of trails will need to stay within the 20-foot easement provided. Sufficient vegetation should be left on roadsides to prevent erosion and maintain soil stability. Vegetation on sides of trails to be as follows: remove all flammable vegetation except that needed to prevent erosion or soil instability. Any remaining vegetation to be properly pruned and cut down to 3" (if that will still prevent erosion or slope instability) and properly spaced to break up continuity of fuel. It can be a landscaped, irrigated, zone if desired if there is no flammable vegetation in it (no vegetation from prohibited plant list in this plan). There shall be no trees within 10' of the trails.

Vegetation in any planters, calming devices, median strips, streets, and areas between split roadways, shall be fire resistive in compliance with this plan and shall not obstruct access in any way. Trees or shrubs on streets shall not be of a type prohibited by this plan. Trees shall not have unbroken canopies, except where allowed by this plan. Street trees shall not be of a type prohibited by this plan. Street trees to be spaced 20 feet between mature canopies. groups of 2-3 approved, fire resistive, trees in a cluster, are allowed provided that there is 20' provided between the mature canopies of these clusters and that there is not flammable understory and that the understory is maintained on an ongoing basis. Street trees to be limbed up 6' from adjacent ground and pruned to 14'6" high, so that 14'6" clear space is maintained over streets. Coastal Live Oak, sycamores, plums and liquid amber may be used as street trees, if otherwise deemed suitable, by the landscape architects, for the high winds and temperatures. Shrubs under street trees to be

fire resistive, low fuel volume, high fuel moisture, low dead to live fuel ratio, and kept to a height of 12 inches or less There shall be no trees within 10' of a fire hydrant.

Any power line easements shall be maintained per applicable state laws, and the requirements of the Fire Marshal, annually, and more often as needed for fire safety. Guidelines from Appendix A of the 2009 ICC International Wildland Urban Interface Code may be used. Annual Fuel Modification, where allowed by Resource Agencies and the County DPLU, should also be done by the power company in the easements underneath power lines.

Roadside Fuel Modification:

There shall be Fuel Modification Zones on each side of roadsides throughout the tract wherever any common areas or HOA maintained roadside areas exist. Otherwise, the private lot owner, and commercial or multi family property managers, shall be responsible to comply with this Section. Per the previously approved editions of this plan, Fuel Modification Zones shall be a minimum 30' wide as previously stated above. The zone may be a landscaped, irrigated wet zone, utilizing fire resistive vegetation. There shall be no flammable vegetation or flammable trees in the roadside fuel modification zones. Any trees shall be fire resistive and shall not be of a type prohibited in this plan. They shall be spaced 20' between canopies. For street trees, the Fire Code section that allows groups of 2-3 approved, fire resistive, trees in a cluster, and then separated from the next tree or cluster can be used. The separation requirement per this plan is 20' between canopies, which would include 20' from canopy of the closest grouped tree to the next tree beyond the grouped trees. There must be no flammable understory, and the understory must be maintained on an ongoing basis. There shall not be closed canopies over roads, and shall maintain a 14'6" high clearance over roads. Any trees shall be planted back from edge of road to center of tree trunk (so trunk doesn't grow into road) and the zones will be landscaped and irrigated. They will be maintained in compliance with this plan, by the HOA. No vegetation prohibited in this plan shall be planted in this area. On interior streets in residential tracts, the roadside clearance distance may include properly landscaped and maintained private lots, which are in compliance with this plan.

Eucalyptus trees, Pine Trees and Palm Trees:

There are Eucalyptus trees on site, which are probably former windrows. It is recommended that the Eucalyptus trees, which are significant fire hazards, be removed from the site. If this is not allowed by Resource Agencies or the County, then at least 50% of the trees should be removed, and the remainder properly maintained by the HOA, with all flammable understory, and down and dead fuels, removed on an ongoing basis. In any event, there shall be no Eucalyptus within 100' of any structure and Eucalyptus shall not be used/retained along any roads.

No new eucalyptus trees, palm trees or pine trees should be planted anywhere on site, unless required by the County or Resource Agencies, as they can ignite and worsen fire

spread on the property. Also, There must me none of these trees in Fuel Modification Zones.

Power lines:

All new power lines shall be underground. Any existing power lines shall have vegetation management as required by the Fire Marshal, State law, and as previously discussed in this plan regarding Fuel Modification Zone C.

GENERAL VEGETATION MANAGEMENT REQUIREMENTS:

The objective is to enclose each structure within a vegetation management zone and remove as much flammable vegetation as possible, to remove any continuous fuel beds, and to limit the potential for burning fuels on the ground to burn into trees and shrubs. Any vegetation (including trees and shrubs) must be approved by the Fire District and be properly spaced, configured and maintained. An added objective is to limit ornamental shrubbery around structures and to create a defensible space around the structure to assist firefighters in protecting the structure.

All vegetation in all zones, including on private lots and in common, HOA, areas, on streets, and in and around any retention basins, or any open spaces where vegetation management is not prohibited by Resource Agencies or the County, within this development, must be maintained annually, and more often as needed, to remove undesirable combustible vegetation, ornamental vegetation, remove dead fuels, replace dead/ dying fire resistant plantings, eliminate ladder fuels, eliminate invasive vegetation and to control the volume of fuel to the satisfaction of the Fire District. In the event of a prolonged drought, curtailment of water, or prohibition against irrigation, vegetation (in Fuel Modification Zones) that requires irrigation may have to be removed and replaced with fire resistive, drought tolerant vegetation, and all dead and dying vegetation would need removal.

Caution must be used not to cause erosion or ground (including slope) instability or water runoff due to vegetation removal, vegetation management, maintenance, landscaping, or irrigation. No uprooting is necessary. Proper cutting to meet the objective can be done.

The vegetation management requirements in this plan are made based upon the understanding that the entire project and all structures will be in strict, ongoing, compliance with all Fire District and Building and Safety requirements for Ignition Resistant Fire Protection as defined in Chapter 7-A of the County Building Code. Permission will be required from Resource Agencies and the County for vegetation management in any sensitive or critical habitat areas. The HOA, homeowners, or the developer may submit alternative methods of compliance with the requirements of this plan, to the Fire District for consideration. The project's landscaping plans and palettes shall comply with the criteria in this plan and the NCFPD prohibited plant list. The NCFPD Fire Marshal can approve an "alternative method" based on a written submittal

from Landscape Architect proposing the “same practical effect” as the criteria in this plan and the use of fire resistive plantings and trees which are not on the Prohibited Plant List, or otherwise prohibited, in this plan.

6. PROHIBITED PLANT MATERIALS:

Certain vegetation is considered to be undesirable in the landscape due to characteristics that make them highly flammable. These characteristics can be physical or chemical. Physical properties that contribute to high flammability include large amounts of dead material retained within the vegetation, rough or peeling bark, and the production of large amounts of litter. Chemical properties include presence of oils, resins, wax, and pitch. Any such existing vegetation should be removed and new ones should not be introduced.

SOME EXAMPLES OF PLANT MATERIAL PROHIBITED IN FUEL MODIFICATION ZONES:

Botanical Name	Common Name	Comment*
Trees		
<i>Abies species</i>	Fir	F
<i>Acacia species (numerous)</i>	Acacia	F, I
<i>Agonis juniperina</i>	Juniper Myrtle	F
<i>Araucaria species (A. heterophylla, A. araucana, A. bidwillii)</i>	Araucaria (Norfolk Island Pine, Monkey Puzzle Tree, Bunya Bunya)	F
<i>Callistemon species (C. citrinus, C. rosea, C. viminalis)</i>	Bottlebrush (Lemon, Rose, Weeping)	F
<i>Calocedrus decurrens</i>	Incense Cedar	F
<i>Casuarina cunninghamiana</i>	River She-Oak	F
<i>Cedrus species (C. atlantica, C. deodara)</i>	Cedar (Atlas, Deodar)	F
<i>Chamaecyparis species (numerous)</i>	False Cypress	F
<i>Cinnamomum camphora</i>	Camphor	F
<i>Cryptomeria japonica</i>	Japanese Cryptomeria	F
<i>Cupressocyparis leylandii</i>	Leyland Cypress	F
<i>Cupressus species (C. fobesii, C. glabra, C. sempervirens.)</i>	Cypress (Tecate, Arizona, Italian, others)	F
<i>Eucalyptus species (numerous)</i>	Eucalyptus	F, I
<i>Juniperus species (numerous)</i>	Juniper	F

9-1-06: Conceptual Fire Protection Plan; Campus Park Development; Fallbrook, by
Hunt Research Corporation (revised 3-12-07, 6-18-08, 4-30-09, 9-14-09)

Botanical Name	Common Name	Comment*
<i>Larix species</i> (<i>L. decidua</i> , <i>L. occidentalis</i> , <i>L. kaempferi</i>)	Larch (European, Japanese, Western)	F
<i>Leptospermum species</i> (<i>L. laevigatum</i> , <i>L. petersonii</i>)	Tea Tree (Australian, Tea)	F
<i>Lithocarpus densiflorus</i>	Tan Oak	F
<i>Melaleuca species</i> (<i>M. linariifolia</i> , <i>M. nesophila</i> , <i>M. quinquenervia</i>)	Melaleuca (Flaxleaf, Pink, Cajeput Tree)	F, I
<i>Olea europea</i>	Olive	I
<i>Picea</i> (numerous)	Spruce	F
<i>Palm species</i> (numerous)	Palm	F, I
<i>Pinus species</i> (<i>P. brutia</i> , <i>P. canariensis</i> , <i>P. b. eldarica</i> , <i>P. halepensis</i> , <i>P. pinea</i> , <i>P. radiata</i> , numerous others)	Pine (Calabrian, Canary Island, Mondell, Aleppo, Italian Stone, Monterey)	F
<i>Platyclusus orientalis</i>	Oriental arborvitae	F
<i>Podocarpus species</i> (<i>P. gracillior</i> , <i>P. macrophyllus</i> , <i>P. latifolius</i>)	Fern Pine (Fern, Yew, Podocarpus)	F
<i>Pseudotsuga menziesii</i>	Douglas Fir	F
<i>Schinus species</i> (<i>S. molle</i> , <i>S. terebenthifolius</i>)	Pepper (California and Brazilian)	F, I
<i>Tamarix species</i> (<i>T. africana</i> , <i>T. aphylla</i> , <i>T. chinensis</i> , <i>T. parviflora</i>)	Tamarix (Tamarisk, Athel Tree, Salt Cedar, Tamarisk)	F, I
<i>Taxodium species</i> (<i>T. ascendens</i> , <i>T. distichum</i> , <i>T. mucronatum</i>)	Cypress (Pond, Bald, Monarch, Montezuma)	F
<i>Taxus species</i> (<i>T. baccata</i> , <i>T. brevifolia</i> , <i>T. cuspidata</i>)	Yew (English, Western, Japanese)	F
<i>Thuja species</i> (<i>T. occidentalis</i> , <i>T. plicata</i>)	Arborvitae/Red Cedar	F
<i>Tsuga species</i> (<i>T. heterophylla</i> , <i>T. mertensiana</i>)	Hemlock (Western, Mountain)	F
Groundcovers, Shrubs & Vines		
<i>Acacia species</i>	Acacia	F, I
<i>Adenostoma fasciculatum</i>	Chamise	F
<i>Adenostoma sparsifolium</i>	Red Shanks	F
<i>Agropyron repens</i>	Quackgrass	F, I
<i>Anthemis cotula</i>	Mayweed	F, I
<i>Arbutus menziesii</i>	Madrone	F
<i>Arctostaphylos species</i>	Manzanita	F
<i>Arundo donax</i>	Giant Reed	F, I

9-1-06: Conceptual Fire Protection Plan; Campus Park Development; Fallbrook, by
Hunt Research Corporation (revised 3-12-07, 6-18-08, 4-30-09, 9-14-09)

Botanical Name	Common Name	Comment*
<i>Artemisia species</i> (<i>A. abrotanum</i> , <i>A. absinthium</i> , <i>A. californica</i> , <i>A. caucasica</i> , <i>A. dracunculus</i> , <i>A. tridentata</i> , <i>A. pycnocephala</i>)	Sagebrush (Southernwood, Wormwood, California, Silver, True tarragon, Big, Sandhill)	F
<i>Atriplex species</i> (numerous)	Saltbush	F, I
<i>Avena fatua</i>	Wild Oat	F
<i>Baccharis pilularis</i>	Coyote Bush	F
<i>Bambusa species</i>	Bamboo	F, I
<i>Bougainvillea species</i>	Bougainvillea	F, I
<i>Brassica species</i> (<i>B. campestris</i> , <i>B. nigra</i> , <i>B. rapa</i>)	Mustard (Field, Black, Yellow)	F, I
<i>Bromus rubens</i>	Foxtail, Red brome	F, I
<i>Castanopsis chrysophylla</i>	Giant Chinquapin	F
<i>Cardaria draba</i>	Hoary Cress	I
<i>Carpobrotus species</i>	Ice Plant, Hottentot Fig	I
<i>Cirsium vulgare</i>	Wild Artichoke	F, I
<i>Conyza bonariensis</i>	Horseweed	F
<i>Coprosma pumila</i>	Prostrate Coprosma	F
<i>Cortaderia selloana</i>	Pampas Grass	F, I
<i>Cytisus scoparius</i>	Scotch Broom	F, I
<i>Dodonaea viscosa</i>	Hopseed Bush	F
<i>Eriodictyon californicum</i>	Yerba Santa	F
<i>Eriogonum species</i> (<i>E. fasciculatum</i>)	Buckwheat (California)	F
<i>Fremontodendron species</i>	Flannel Bush	F
<i>Hedera species</i> (<i>H. canariensis</i> , <i>H. helix</i>)	Ivy (Algerian, English)	I
<i>Heterotheca grandiflora</i>	Telegraph Plant	F
<i>Hordeum leporinum</i>	Wild barley	F, I
<i>Juniperus species</i>	Juniper	F
<i>Lactuca serriola</i>	Prickly Lettuce	I
<i>Larix species</i> (numerous)	Larch	F
<i>Larrea tridentata</i>	Creosote bush	F
<i>Lolium multiflorum</i>	Ryegrass	F, I
<i>Lonicera japonica</i>	Japanese Honeysuckle	F
<i>Mahonia species</i>	Mahonia	F
<i>Mimulus aurantiacus</i>	Sticky Monkeyflower	F
<i>Miscanthus species</i>	Eulalie Grass	F
<i>Muhlenbergia species</i>	Deer Grass	F

9-1-06: Conceptual Fire Protection Plan; Campus Park Development; Fallbrook, by
Hunt Research Corporation (revised 3-12-07, 6-18-08, 4-30-09, 9-14-09)

Botanical Name	Common Name	Comment*
<i>Nicotiana species (N. bigelovii, N. glauca)</i>	Tobacco (Indian, Tree)	F, I
<i>Pennisetum setaceum</i>	Fountain Grass	F, I
<i>Perovskia atroplicifolia</i>	Russian Sage	F
<i>Phoradendron species</i>	Mistletoe	F
<i>Pickeringia montana</i>	Chaparral Pea	F
<i>Rhus (R. diversiloba, R. laurina, R. lentii)</i>	Sumac (Poison oak, Laurel, Pink Flowering)	F
<i>Ricinus communis</i>	Castor Bean	F, I
<i>Rhus Lentii</i>	Pink Flowering Sumac	F
<i>Rosmarinus species</i>	Rosemary	F
<i>Salvia species (numerous)</i>	Sage	F, I
<i>Salsola australis</i>	Russian Thistle	F, I
<i>Solanum Xantii</i>	Purple Nightshade (toxic)	I
<i>Silybum marianum</i>	Milk Thistle	F, I
<i>Thuja species</i>	Arborvitae	F
<i>Urtica urens</i>	Burning Nettle	F
<i>Vinca major</i>	Periwinkle	I

*F = flammable, I = Invasive

NOTES:

- Plants on this list that are considered invasive are a partial list of commonly found plants. There are many other plants considered invasive that should not be planted in a fuel modification zone and they can be found on The California Invasive Plant Council's Website www.cal-ipc.org/ip/inventory/index.php. Other plants not considered invasive at this time may be determined to be invasive after further study.
- For the purpose of using this list as a guide in selecting plant material, it is stipulated that all plant material will burn under various conditions.
- The absence of a particular plant, shrub, groundcover, or tree, from this list does not necessarily mean it is fire resistive.
- All vegetation used in Vegetation Management Zones and elsewhere shall be subject to approval of the Fire Marshal.
- Landscape architects may submit proposals for use of certain vegetation on a project specific basis. They shall also submit justifications as to the fire resistivity of the proposed vegetation.
- This list was prepared by Hunt Research Corporation and Dudek and associates and reviewed by, Scott Franklin Consulting co.

7. PLANTING, SPACING AND MAINTENANCE GUIDELINES:

General information:

- Make all measurements on the horizontal straight out (plan view) from structures, rather than down the slope.
- Maintenance includes irrigation and annual removal of weeds, dead materials, and other undesirable flammable vegetation required to keep the area fire safe.
- As new plantings mature, they must be thinned to maintain the recommended spacing and heights.
- The terms "fire resistant" or "fire retardant" are misleading. All vegetation and plants will burn if exposed to enough heat. Because something is considered fire

- retardant or fire resistant does not mean that unlimited quantities can be planted or that they will somehow slow down a fire.
- E. Limit or eliminate use of plants, which are known to be flammable.
 - F. Limit use of plants, which develop large amounts of foliage, branches, or dead material.
 - G. Limit use of plants, which develop deciduous or shaggy bark.
 - H. Limit use of plants, which develop dry or dead undergrowth.
 - I. Recommended tree spacing is 20' between mature canopies in Zones A and B, and in streetscapes, and 30' on Zone C. Refer to text in plan regarding grouping of 2-3 trees in streetscapes.
 - J. Shrubs and plants should be spaced as specified in this plan for the Fuel Modification Zones. Maintain heights per requirements for the Fuel Modification Zones.
 - K. Keep shrubs out from drip line of trees.
 - L. Configure plantings so that they are spaced and maintained so as not to create a direct path from native growth to a structure.
 - M. Do not use bark or chipped biomass in Zone A No mulch allowed within 12 inches of structure.
 - N. All plant species must be limited to those approved by the Fire District for this area.
 - O. Prohibit massing of vegetation adjacent to structures, especially under eaves, overhangs, windows, vents, decks, etc.
 - P. All native species in the first 100' of a Fuel Modification Zone are required by the NCFPD to be removed except for isolated, single, specimens.
 - Q. Yearly maintenance, before fire season (typically May 1, including during construction), and more often as necessary for fire safety, is required to reduce fuel volumes, eliminate weeds, remove dead vegetation, cut grass, limb up and prune, remove down and dead fuels, remove flammable under story, etc
 - R. Use due caution to not cause erosion, soil or slope instability, due to landscaping, vegetation removal, vegetation management, or irrigation.
 - S. Legal written permission is needed from offsite property owners before doing any fuel modification on offsite properties.
 - T. Legal, written, permission is required from the County DPLU and the Resource Agencies if any fuel modification work, or landscaping, is to be done in any sensitive habitat, riparian zone, regulated open space, or other location where fuel modification is normally prohibited.
 - U. After a storm, any down and dead vegetation, including trees, will need to be removed from Fuel Modification Zones
 - V. In the event of a protracted drought, or curtailment of irrigation, plants and trees, in fuel modification zones, that require irrigation may require removal for fire safety, and replacement with fire resistive, drought tolerant, plants and trees.

**ANNUAL ONGOING VEGETATION MANAGEMENT AND ONGOING
MAINTENANCE RESPONSIBILITIES:**

Vegetation management shall be done annually by May 1 of each year and more often as needed for fire safety. The individual homeowners shall be responsible for all vegetation management on their private lots, in compliance with this plan and Fire District requirements. Private lot owners are responsible to do annual vegetation management on their lots in order to maintain vegetation in compliance with this plan. The HOA shall have the responsibility and authority for assuring ongoing compliance with the vegetation planting, management, and maintenance requirements of this plan and in the CC and R's, on all private lots, common areas, roadsides and open space under their control. The HOA shall obtain an inspection and report from a Fire District authorized Wildland Fire Safety Inspector, in May of each year, certifying that the vegetation management on private lots and in common areas/ open space, etc, has been done according to this plan. Such report is to be funded by the HOA and submitted for Fire Marshal approval. The HOA will be required to annually fund an inspection of common areas and individual lots to ensure compliance with this Fire Protection Plan for construction, fences and vegetation. Such inspections are to be performed by the NCFPD.

Vegetation Management requirements and the requirements for continuous maintenance, as set forth in this plan, must be documented in the private lot deed encumbrances, CCR's and in any other required legal documents and disclosures at time of sale. It must be made absolutely clear to homeowners that they have a legal responsibility to maintain a fire safe defensible space on all sides of the structures in compliance with this plan and the Fire District requirements. The Homeowners Association (HOA) shall enforce vegetation management requirements, and structural protection requirements on all private lots, common areas and HOA open space, and enforce vegetation management requirements in Zones A-B-C.

CONSTRUCTION PHASE VEGETATION MANAGEMENT

Vegetation management in all common areas, roadsides, etc shall be done as required in this plan at the start of, and throughout the construction phase. Vegetation management shall be done on private lots prior to work beginning on those lots and prior to any combustible construction materials being brought on site. Adequate fuel breaks shall be created around all grading, site work and other construction activities in areas where there is flammable vegetation.

8. INFRASTRUCTURE, STRUCTURAL FIRE PROTECTION/ FIRE PROTECTION SYSTEMS.

Wildland Urban Interface (WUI) fire protection is a systems approach, which includes the components of Vegetation management, adequate infrastructure and structural safeguards. This section provides recommendations for those components:

A. INFRASTRUCTURE RECOMMENDATIONS:

The following conceptual recommendations are made in order to comply with the North County Fire Protection District requirements, County of San Diego DPLU requirements, San Diego County Building Code Ignition Resistant WUI requirements, Section 4710 of the 2007 County Fire Code, the International Urban Wildland Interface Code; 2003 Edition, and nationally accepted fire protection standards as well as assisting in providing reasonable on site fire protection. The applicable County Fire or Building Code Sections are listed.

These recommendations are divided into general recommendations for all structures, and then additional special recommendations for multiple family dwellings, commercial buildings, including any transit center, or industrial buildings.

1. BASIC REQUIREMENTS FOR ALL STRUCTURES IN DEVELOPMENT:

A. WATER SUPPLY AND FIRE SPRINKLERS

1. Fire Hydrant Spacing:

Fire Hydrants shall be of a type to approval of the Fire District and should have one 4" outlet and one 2.5" outlet. Hydrants at Commercial and office buildings to have two 4" and one 2.5" outlet. Hydrants shall be located no more than 500' apart on roads in single-family residential areas throughout the development. Spacing in multi-family, Commercial and Industrial areas to be 300 feet. Hydrants shall be located at all intersections, and in between where needed to provide the 300 to 500' spacing. Hydrants shall also be located at the entrance to all cul-de-sacs, but not in the bulb. Hydrants shall be located on the right (response) side of the street, based on the assumed fire engine driving route from the closest tract entrance.

Final location of all hydrants is subject to approval of the Fire Marshal.

Hydrants shall have a street valve in the hydrant lateral, located 10 to 25' from the hydrant. Wet barrel hydrants shall have a 3' X 3' concrete pad at the base of the hydrant for weed control. Dry barrel hydrants, if specified

by engineer due to any freezing problem, would have a gravel pad instead of concrete.

Fire Hydrants are to be installed, operable and approved by Fire District prior to bringing combustibles onto job site.

2. Needed Fire Flow, Duration and storage:

The required fire flow shall be 2500 GPM fire flow at 20 PSI or greater in the water main system with a 2 hour duration (300,000 gallons). Water supply is to be from the Rainbow Municipal Water District. The system should be a looped system served from two points. Main sizes should be at least 8" diameter and as needed to supply the required fire flow at periods of maximum peak domestic demand. The County Fire Code requires a minimum fire main capacity of 2500 GPM in a Wildland Urban Interface area.

All structures over 200 square feet, including all single and multi family residences, garages, carports, workshops, commercial town center, office buildings, barns, RV garages, sewer plant, etc, to have the appropriate NFPA 13 internal Fire Sprinklers, based on the occupancy. (NFPA 13 Standards 13, 13-D, 13-R). Single-family detached dwellings (R-3 occupancies) are required to utilize 13-D systems. Multi family dwellings (R-2 occupancies) to be 13-R. Commercial and office buildings to be NFPA 13 systems. The consultant recommends a 4 head calculation for the 13-D residential systems. The Fire District and DPLU Fire Marshal shall make final determinations as to type of system. Residential structures larger than 13,400 sq feet, if any are built, will have increased fire flows per Fire Code Appendix **B-105**, and may utilize a 50% credit for sprinklers. The minimum fire flow with a sprinkler credit is to be 1500 GPM. However, the required minimum of 2500 GPM at 20 PSI or greater in the water main system also applies.

Each fire hydrant shall be able to flow at least 1000 GPM at least 20 PSI during a single hydrant flow test. Approximately sixty-PSI static pressure or more may be required to supply all internal sprinkler systems in the structures. The water system shall be designed to assume that five sprinkler systems are operating at the same time the 2500 GPM water main system fire flow is occurring. The 2-hour duration should be provided at the same time as the peak domestic demand.

Adequate isolation valving shall be provided in the mains, per AWWA M-31 recommendations for a fire protection water system. The system shall be designed so that no more than 2 fire hydrants (1000') can be shut off at any one time, due to a shutdown of a main. The system shall be designed

to provide the needed flows with one source of supply shut off. The system must be properly engineered for seismic resistance.

The water system shall be designed to Fire District standards, AWWA M-31 standards for fire protection systems, and Fire District water system standards. The minimum 2500 GPM requirement for the water main system is found in the County Fire Code. Actual flow requirements will be established by the Fire District and the DPLU Fire Marshal at time of detailed design of the water system and buildings. It is the responsibility of the project engineer to ascertain and provide the adequate and required fire flows and to obtain all necessary approvals of agencies, Fire District, other applicable entities, etc., prior to system construction and installation

3.SPECIAL ADDITIONAL WATER SUPPLY AND SPRINKLER SYSTEM REQUIREMENTS:

3-A: MULTI FAMILY OCCUPANCIES:

Any multi family residential buildings shall be equipped with approved Fire Sprinkler systems, in order to minimize structure fires and to confine a fire to the room of origin. NFPA 13-R systems are required by the Fire District. The Fire Department pumper connection shall be at street in front of buildings (address side of buildings) and have a fire hydrant on same side of street within 25'. Residential units built over commercial retail units shall also be fire sprinklered due to the risk of a commercial fire exposing the residences above.

The required fire flow may need to exceed the 2500 GPM minimum, subject to size and height of buildings.

Fire hydrants shall be located at 300' intervals in front of lots, and on any on site roads when driving distance exceeds 150' from hydrant on a public road. On site mains shall be 8" diameter, or greater if needed to provide needed fire flow.

Hydrants shall not be closer than 40' from a building unless the building wall has a 2-hour fire rating.

3-B: COMMERCIAL BUILDINGS, OFFICE BUILDINGS, AND OTHER NON RESIDENTIAL BUILDINGS:

1. All commercial and office buildings shall have remotely supervised fire sprinkler systems. Final determinations are up to the Sprinkler designer and Fire District at time actual use and occupancy are known and system design is done. Sprinkler systems to comply with NFPA

13. Systems in spec buildings to be designed to the highest expected potential risk. For example, High Piled Stock (such as High Hazard or Group A plastic), Extra Hazard occupancies, or Ordinary Hazard occupancies. The occupancy type shall be determined from Tables in NFPA 13 (and from Article 23 for high piled stock).

Buildings without high piled stock shall have sprinkler systems in compliance with NFPA 13 for the type of hazard. Occupancies regulated by Article 27 of the Fire Code (hazardous materials) shall have a minimum sprinkler design of Ordinary Group 2 over 3,000 sq ft. Occupancies with flammable and combustible liquids shall comply with the sprinkler requirements in Article 34 of the Fire Code in addition to NFPA 13.

A Wet Standpipe system should be provided in the Office Building due to the 35' height of building. Outlets should be located in each stairwell and on roof. The entire wet standpipe needs to be interconnected so as to be capable of being pressurized by one FDC, to avoid confusion.

The following Table is provided by the consultant to reflect generic examples of potential needed water flows for fire sprinkler systems plus hose streams. The actual needed fire flow should be either the worst case needed sprinkler demand plus 500 GPM for hose, or the flows required by Fire Code Appendix B-105 with a 50% sprinkler credit, whichever is greater. Final requirements for fire flow and sprinkler system demand shall be made by the Fire District and the DPLU Fire Marshal. Actual sprinkler system design is the responsibility of the sprinkler contractor and will be in compliance with NFPA 13, 13-D or 13-R as may be applicable, and is out of the scope of this plan.

ESTIMATED FIRE SPRINKLER DEMANDS BASED ON OCCUPANCY/USE (GENERIC EXAMPLES)

OCCUPANCY/USE	DENSITY (gpm/sf)	Area of Application (sf)	Sprinkler Demand (gpm) (with imbalance)	Hose Demand (gpm)	Total Demand (gpm)
Spec Warehouse (< 25' ht)	0.45	3000	1485	500	1985
Spec Warehouse (> 25' ht)	0.60	3000	1980	500	2480
Spec Warehouse (w/ EFSR)	ESFR	Special Application Sprinklers Flowing 12-13 heads	1750 ¹	250	2000
High Piled Group A Plastics	ESFR	Special Application Sprinklers Flowing 12-13 heads	1750 ¹	500	2250
High Piled Flammable Liquids (25' high)	0.60	3000+ in rack sprinklers	2530	1000	3530
Hazardous Materials (H room)	0.60	3000+ in rack sprinklers	2530	1000	3530
Flammable Liquids Spraying	0.40	2500 (ex.haz.gr.2)	1200	500	1700
Rubber Tire Storage (20' high ²)	0.40	3000+ 1 level in-racks	1585	500	2085
Rubber Tire Storage (20' high ³)	0.60	3000	1980	500	2480
Big Box (Home Depot, etc.)	ESFR	Special Application Sprinklers Flowing 12 - 13	1750 ¹	250	2000
Recycling facility (parts, etc.)	0.20 ⁴	1500	360	250	610
Manufacturing (low hazard)	0.20	1500	360	250	610
Manufacturing (high hazard)	0.40	2500	1100	500	1600
Research and Development	0.20	1500	360	250	610
Indoor Storage and Hazardous Materials Storage	0.17 ⁵	3000	610	250	860

1 Fire Pump typically required to meet flow and pressure demands

2 Fixed racks, on pallets, on-side or on-tread (10' Max. clearance between sprinkler deflector and max-storage ht.)

3 Fixed racks, w/o pallets, on-side or on-tread (10' Max. clearance between sprinkler deflector and max-storage ht.)

4 Higher densities required if high piled storage included

5 Minimum flow rate (Ordinary Group 2) over minimum 3000 sf operating area per CFC Article 80, Section 8003.1.6. Higher densities and hose demand may be required based on commodity and storage height.

**THE POTENTIAL WORST CASE SPRINKLER AND HOSE
STREAM FIRE FLOW REQUIREMENT COULD BE 3530 GPM
OR GREATER.**

4. Buildings with multiple risers shall have water flow alarm annunciator panel at main entrance indicating location, zone, and riser where flow is occurring.
5. Sprinkler risers having valves, or other appurtenances vulnerable to effects of fire, shall be in a 1-hour rated room, with exterior access, or be located on exterior of building. The number of risers is based on requirements of NFPA 13

6. Fire Department pumper connection to be at street curb in front of address side of building at least 40' from building. FDC to be within approximately 25' of a public fire hydrant on the same side of street. Approved guard posts shall be installed and shall not impair operation of connections or hydrants.
7. Systems with a combined total demand over 2000 GPM to have a 4 inlet FDC with a 6 " diameter pipe with a 6" check valve.
8. One FDC shall serve all buildings on the property if same address. Each system to be individually valved. Buildings with different street addresses shall have their own FDC.
9. All sprinkler systems to be remotely supervised to an approved 24 hour answering point. Supervision includes all valves back to water source (public system).
10. Fire flow to be per Appendix B-105 of County Fire Code. 50% maximum credit for sprinklers, to a minimum of 2500 GPM X 2 hour, or the worst case fire sprinkler demand plus hose line requirements, whichever is greater. Fire flow shall be provided at the same time as maximum peak domestic and industrial water flow on site. Fire pumps may be needed if pressure to sprinklers is inadequate. Final fire flow requirements for the water system will be established by the Fire District upon submittal of detailed plans. Plans should be submitted for approval before water system design is finalized. Actual design of the fire water system, including fire water loop, and the obtaining of all necessary approvals, is the responsibility of the engineer and is out of the scope of this plan.
11. Fire hydrants having two 4" and one 2.5" outlet shall be located at 300' spacing on public roads fronting the lots. On site fire hydrants, having two 4" outlets and one 2.5", outlet are required when distance exceeds 150' driving distance from an approved public hydrant on the street. On site hydrants to be spaced at 300' intervals on the on site access road. Hydrants shall not be closer than 40' from the structure, or be protected by a 2 hour rated fire wall. Hydrant lateral valves to be 10 to 25' from front of hydrant. On site mains shall be at least 8" diameter and larger if needed to provide needed fire flow.

High Piled Stock

High piled Combustible Storage is storage of combustible materials in closely packed piles or combustible materials on pallets, in racks, or on shelves where the top of the storage is greater than 12' in height. When

required by the Chief, high piled combustible storage also includes certain high hazard commodities, such as rubber tires, Group A plastics, flammable liquids, idle pallets and similar commodities where the top of storage is greater than 6' in height.

It is critical that the commodities and method of storage be properly classified. This would include classification of any hazardous materials, flammable and combustible liquids.

High piled stock occupancies will comply with Article 23 of the 2007 State and County Fire Codes, and NCFPD requirements, including sprinklers, rack design, aisle ways, smoke vents or smoke exhaust systems, firefighter access doors, and on site access.

Three story residences (if any)

Three story residences increase the fire and life safety risks in a residential structure. If any such structures are proposed, it is recommended that the following be considered for enhanced fire and life safety, in addition to complying with the Building Code requirements for size, square footage, and type of construction.

- NFPA 13-R sprinkler system with 4 head calc, including sprinklers in attic.
- Fire resistive, 1 hour rated, construction
- Provide large enough windows, sliding doors, and provide balconies, for escape.
- Use vaulted ceiling on third floor to eliminate attic space and attic vents.
- Use only non-combustible insulation with non-combustible paper.
- Enclose the stairway to the third story with rated self-closing door and 1-hour walls.
- Smoke detection system in house shall sound the alarm in all detectors when any detector activates.
- Top of balcony shall not be more than 25' above accessible grade. 35' ladder will not reach over that.
- Provide a flat concrete spot on ground for fire department to raise to the 3rd story balcony. Spot to be 5' by 5' and be 8' from building wall.
- Provide 4' wide firefighter foot access around all structures. Access must be adequate for maneuvering a gurney and a ground ladder.

TALLEST BUILDING IN DEVELOPMENT

The tallest building in the development will be the Professional Office Building, which is proposed to be 35 feet tall. . REFER TO LIST OF ADDITIONAL FEATURES FOR THIS BUILDING IN SECTION C-2-B.

B. ACCESS:

B-1: BASIC REQUIREMENTS FOR ALL OCCUPANCIES IN DEVELOPMENT

1. Road widths and circulation:

The roads are public roads. Main access to the development is from Horse Ranch Creek Road (new road) off of Highway 76. Roads shall conform to San Diego County standards for private and public roads. Roads shall be paved and shall be designed to accommodate a 75,000 lb fire truck. Unobstructed road widths (unobstructed by parking) on public roads and on any onsite roads at multi family apartments shall be 24' per the San Diego County Fire Code. (Section 503.2.1; County Fire Code). Proposed road widths include 36', 40', 52' and 64' depending on the road. Parking will be restricted by posting of signs stating "No Parking; Fire Lane" where needed to preserve the 24' unobstructed width for emergency response on roads in tract and on site in apartment complexes, and commercial and industrial lots. Vertical clearance over roads to be 14'6" with no canopy. Parking space allocations will be located so as to not intrude into the 24' minimum fire access width.

The North County Fire District letter of 10-26-06 required improvement of Pala Mesa Drive from Fire Station #4 to the project as a circulation element road. This is shown on the latest Development Plans (See dwg in appendix for example).

The Fire District has the following requirements, which shall be complied with and are shown below per requirement of the DPLU Fire Marshal. The following roads must be constructed prior to the designated phases:

- Pala Mesa Drive from west of I-15 prior to any construction North of the intersection of Pala Mesa Drive and Horse Ranch Creek Road.
- Horse Ranch Creek Road; Highway 76 to Stewart Canyon Road prior to any construction North of Harvest Glen Lane.

- Baltimore Oriole Road (appears same as Pala Mesa Heights Road) connected to Pala Mesa Heights road to Meadowood project “street D” prior to construction in vicinity of Song Sparrow Drive.
- Pankey Road connected to Horse Ranch Creek Road prior to construction east of Horse Ranch Creek Road.
- NOTE: These street names may not correspond with those of the adjacent project. The streets are necessary for response times consistent with the General Plan Safety Element, and for compliance with maximum dead end lengths permitted in the County Fire Code and Title 14, Sections 1200 (Comment from DPLU Fire Marshal).
- Access to the southern development will be provided through ‘ Song Sparrow Road” connecting to street “D” of TM 5354 and/or and IOD. Road will be fully graded with a 28’ street on west side. Harvest Glen Lane will provide the same type of permissions for connection to adjacent project.
- Phalarope Street will connect with the Pardee “D” street to the east. Grey Goose lane and Whistling Swan Way create a loop road.
- All access between garages is 24’ wide. Garages are set back 5’. This provides 34’ between structures. Parking will not be permitted within these drives and the drives will be so marked.

Any driveways in excess of 150’ in length shall have approved provisions for turning around fire apparatus. Cul-de-sacs on such roads to have 42’ radius and be AC paved.

Required turning radius is to be 28’ measured to inside edge of improved width, per Fire Code.

Roadways and/or driveways shall provide fire department access to within 150’ of all portions of the exterior walls of the first floor of the structure.

Approved fire department turnarounds are required for all driveways greater than 150’ long.

Fire Department apparatus access shall be provided around the perimeter of all developed areas (areas where there are structures) to open space and flammable vegetative areas. These access points may be in the form of a 12' wide paved access point, along development roads, at intervals to approval to the Fire District. Fire hydrants shall be located at or near these access points. The Town Center shall provide paved vehicle access around buildings D and E and there will be paved fire apparatus access roads around, and to rear of, all commercial buildings.

The longest cul-de-sac is 750'. This is in the SFD detached area. The Fire code allows up to 800' for these size lots (less than 1 acre).

Roadside design features (speed bumps, humps, speed control dips, planters, fountains, etc.) which could interfere with emergency apparatus response speeds and required unobstructed access road widths, shall not be installed or allowed to remain on roadways. The center dividers on Horse Creek Ranch Road and Pala Mesa Drive shall have 12' wide openings every 500' for emergency vehicles to cross to the other side.

There shall be no vegetation or trees within any calming devices, planters, medians, slopes or other vegetated areas on roadsides, which could grow over the roadway and impede emergency apparatus access. Vertical clearance is required to be 13'6". This plan recommends 14'6" height. The type of vegetation shall be fire resistive and comply with this plan.

Angle of departure is required to not exceed 7 degrees (12%).

Developer shall provide information showing the new roads, in a format acceptable to the Fire District, for updating of Fire District maps. (Section 505.5; County Fire Code)

2. Road Grades:

Road grades for all access roads and driveways shall not exceed 20% per the Fire District.

3. Access Gates: (Section 503.6; County Fire Code).

Public roads shall not be gated, per the Fire Code.

All gates on any private roads and on private driveways shall conform to the North County Fire Protection District standards for electric gates, and County Fire Code Sec 503.6, and shall be as follows:

- Non combustible

- Sliding type, or swing in direction of travel.
- Have provision for manual operation from both sides if power fails. Gates shall have the capability of manual activation from the development side, via contact by a person or a vehicle.
- Exit trip loop device.
- Located 30' in from any intersecting road.
- Be provided with KNOX key switch, dual keyed to also allow Law Enforcement access, and with Opticom type sensors for detecting emergency vehicle strobe lights from any direction of approach. Strobe detection and key switches shall be provided on the interior and exterior of gates.
- Gate activation devices to be equipped with a battery back up or manual mechanical disconnect in case of power failure.
- Gate area to be lighted
- Width of gated area to be 2' wider than the road which is gate
- Gates to have unobstructed 13'6" vertical clearance.

4. Driveways:

Driveways shall have grades not exceeding 20% per Fire District. Any driveways serving two houses shall be 16' wide unobstructed and have a fire apparatus turnaround. Driveways serving more than two houses shall be 24' unobstructed. Lighted house addresses shall be posted at the entrance to each driveway if house numbers are not visible from street. When possible, while placing fire hydrants, such hydrants should be at entrances to driveways. Gates shall comply with Section 3 above.

5. Identification of Roads and Structures: (Section 505.1; County Fire Code)

All structures shall be identified by lighted street address numbers at the structure. Numbers shall be 4" in height, 3/8" stroke, and located 6 to 8' above grade. Numbers on multi-family, commercial/industrial occupancies to be 6" in height with 1/2" stroke. Numbers shall contrast with background. All addresses of any multiple structures located off driveways shall be posted on structures, on the entrance to individual driveways, and at the entrance to the common driveway. If the structure is 100' from the roadway, numbers shall also be located at entrance to driveway.

Streets shall have street names posted on non-combustible street signposts. Letters/ numbers to be 4" high, reflective, on a 6" high backing. Signage to be 7' above grade. There shall be street signs at each intersection, the entrance to the development, and elsewhere as needed. Road signage is required to comply with San Diego County Standard DS#13.

6. Roads and fire hydrants shall be installed and serviceable prior to introduction of combustible materials, other than foundation forming material, on a lot.

B-2: SPECIAL ADDITIONAL ACCESS RECOMMENDATIONS:

B-2-.A: MULTI FAMILY AND ANY CONDOMINIUMS

1. 24' wide, unobstructed, clear to the sky, access roads shall be provided to within 150' of any portions of the building or of the exterior walls of the first story of any building, as measured by an acceptable route around the building. In addition, acceptable, 4' wide, unobstructed, firefighter foot access should be provided to all front doors of all units, to allow the transport of equipment, ladders, or an ambulance gurney. Any building over 28' high should have 28' wide unobstructed access road (clear to the sky) for the use of aerial fire apparatus. Roads to be posted "'No Parking; Fire Lane'" and shall be delineated on pavement, to maintain the required 24' unobstructed emergency access width.
2. The side of any access road which is not designated for parking shall have curb painted red and be posted with signs stating " No Parking Fire Lane".
3. Private driveways for garage access to be designed and posted as "Fire lane- No Parking".
4. Ample guest and disabled parking must be provided and shown on detailed plans so that parking does not obstruct Fire lanes. Parking, including guest parking, is dispersed throughout the project and meets the County Zoning Ordinance. Guest parking is numbered and handicapped parking is marked with wheelchair symbol. Parking will be monitored by the HOA with fines for violations established for residents and guests.
5. Provide clear locations for spotting of Fire Department ground ladders at multiple storied structures. Provide square or circular concrete pad so that the base of the ladder can be placed on the pad and ladders can be raised to multiple stories. One spot should be located on side of structure under location of upper story windows. Spot should extend out to approximately 8' from structure to provide a 75-degree climbing angle. Actual distance depends on building height and should be determined at time of detailed design. Provide for the maneuvering of a patient gurney from walkway or road to each structure's front door. There shall be no trees or landscape, other than groundcover in these areas, so that Fire Department can gain access with ladders.
6. A lighted directory map shall be located at each entrance to any major multi family or condominium complex (more than 15 units) and maps shall be supplied to each fire station. Each building shall have numbers or

letters clearly visible from the street. Letters or numbers to be 6" high with ½" stroke.

B-2-B: OFFICE, TOWN CENTER, ON SITE ACCESS:

1. On site paved access roads required if any portion of building, or exterior wall of first floor, exceeds 150' driving distance from the public street, which the building is addressed on. Road to extend to within 150' driving distance of all portions of the facility and first floor of exterior walls of buildings. Where possible, on site roads should encircle the building. Road to be 26' in width, clear to sky, paved and designed to Fire District standards. Road to support a 75,000 pound ladder fire truck. Firefighter access to be provided to within 10' of building wall to place ground ladders
2. For buildings 28' and over, road to be 28' in width to facilitate possible aerial ladder truck operations. Road to extend to within 150' driving distance of all portions of the facility and first floor of exterior walls. Where possible, the on site road should encircle the building. Road to also be located a minimum of 15' and a maximum of 30' from, and be parallel to, highest and largest wall on at least 2 opposite sides of building. (in order to position ladder truck).
3. Access roads shall be posted "No Parking Fire Lane" and be delineated on pavement.
4. Developer should record legal document (Yard Agreement) stating that there will be no storage or future construction in access roads.
5. Approved cul-de-sac type turnarounds required for roads exceeding 150'. Radius to be 42'.

C. IGNITION RESISTANT STRUCTURAL RECOMMENDATIONS:

This Section of the plan recommends the concepts for ignition resistant construction, which meet the requirements of the Fire District and the County of San Diego Building Code. These recommendations reflect the requirements found in the 2007 County Fire Code Section 4710 and Section 92.1. 704 of the County Code of Regulatory Ordinances (2007 County Building Code; which adopts and modifies Chapter 7-A of the 2007 California Building Code) hereafter referred to in this plan as Section 92.1.704. This section of this revised Fire Protection Plan has been updated to reflect the latest Code requirements.

It must be understood that while these standards will provide a high level of protection to structures in this development, and should reduce or eliminate the need to order evacuations, there is no guarantee of assurance that compliance with these standards will prevent damage or destruction of structures by fire in all cases.

C-1; IGNITION RESISTANT REQUIREMENTS FOR ALL OCCUPANCIES IN DEVELOPMENT:

There is no item herein that is less restrictive than the Fire Code.

1.Exterior walls:

Exterior walls of all structures shall comply with County Building Code Section 92.1.704A.3 and be approved non-combustible or ignition resistant, (such as Building Official approved stucco, concrete, masonry or approved cement fiber board) from grade to underside of roof system per the Building Code. Wood shingle and shake wall covering is prohibited. Any unenclosed underfloor areas shall have the same protection as exterior walls. Exterior wall coverings shall extend from the top of the foundation to the roof and terminate at 2-inch nominal solid wood blocking between rafters at all roof overhangs, or in the case of enclosed eaves, terminate at the enclosure.

There should be no eaves on perimeter structures.

Eaves shall be properly enclosed and eaves and soffits shall be properly constructed to Fire District and County Building Official requirements and shall meet the requirements of SFM 12-7A-3 or shall be protected by ignition resistant materials or approved non combustible construction on exposed underside.

There shall be no use of paper-faced insulation, or combustible installation, in attics or other ventilated areas (CBC 92.1.706.A.1).

There shall be no use of plastic, vinyl or light woods on the exterior
Except vinyl window frames if protected as required in this plan.

2. Roofs:

Roofs shall be Class A fire rated roof assemblies on all structures (including if available for flat roofs on the commercial/industrial buildings if flat roofs are used), in compliance with Section 92.1.704A.1 of the County Building Code. Roof coverings where a profile allows space between covering and roof decking shall be constructed and to prevent intrusion of flame or burning embers, or be firestopped, etc per Section

92.1.704A.1.2. If Class A roof assemblies are not yet available for flat roofs, then Class B roofs may be acceptable to DPLU, upon submittal of a request for Alternative Methods to the Fire District and the DPLU Fire Marshal. (Roof Valleys shall comply with Section 92.1.704A.1.3).

3.Ventilation:

No attic ventilation openings or ventilation louvers shall be permitted in soffits, rakes, cornices, eaves, in eave overhangs, between rafters at eaves, or in other overhanging areas in the Urban Wildland Interface Area. Attic or foundation ventilation openings or ventilation openings in exterior walls and exterior doors shall resist the intrusion of flame and embers into the structure and be louvered and shall be covered with corrosion-resistant metal screen or other approved material that offers equivalent protection. Vents shall not exceed 144 square inch each. Attic ventilation shall also comply with the requirements of the Building Code. Vents shall not be placed on roofs unless they are approved for Class "A" roof assemblies, and contain an approved baffle system to stop intrusion of burning material, or are otherwise approved.

Vents on perimeter structures should not face the north or east perimeter or riparian and open space areas of the tract. The Building Department should investigate the use of 1/8" mesh for attic vents, backed up by a baffle system, such as that manufactured by Brandgaud vents (www.brandguardvents.com; 949-481-5300) or approved equivalent, to catch burning debris. It was discovered, in the recent fires in San Diego County, that burning embers and debris were entering through the code compliant 1/4" mesh vents and igniting fires in the attics. 2007 California Building Code Section 1203.2.1 now allows 1/8 or 1/4" mesh.

Vents in exterior walls, doors, and roofs such as roof vents, dormer vents, gable vents, foundation vent openings, vent openings in walls, or other similar vent openings shall resist the intrusion of flame and embers into the structure and be covered with louvers and the required 1/4" or 1/8" mesh.

Turbine vents are not recommended. If installed, they must turn in one direction only so as to not suck burning debris into the attic.

Vents are discussed in Section 92.1.704; sub section 704.A.2 of the 2007 County Building Code

Vents shall prevent the intrusion of flame and embers into the attic or other ventilated space.

4. Glazing:

Per 2007 County Building Code Section 92.1.704A.2.2 and 704A.3.2.1; Sub Section 704A.3.2.2, Exterior windows, window walls, glazed doors, and glazed openings within exterior doors (or other transparent, translucent or Opaque glazing, leaded glass, etc; ed), shall be insulating glass units with a minimum of one tempered pane, or glass block units, or have a fire resistance rating of not less than 20 minutes when tested per ASTM E2010, or conform to the performance requirements of SFM-12-7A-2. Plastic or vinyl window frames shall be of an approved type, which will not melt, ignite, or fail. Vinyl Frames shall have “welded” corners and metal reinforcement in the interlock area to maintain integrity. They shall be certified to ANSI/AAMA/NWDA 101/LS-2-97 structural requirements. The size and amount of glazing facing wildland and open space areas should be minimized. Screens should be steel rather than plastic.

Skylights shall be tempered glass. 2007 County Building Code Section 92.1.704 A.1.6.

5. Rain Gutters and Downspouts:

There shall be no combustible rain gutters or downspouts. Chapter 92.1.704A.1.5 of the County Building Code requires that they be provided with the means to prevent the accumulation of leaf litter or debris, which can ignite roof edges. .

6. Exterior doors:

Exterior doors shall be approved non-combustible or solid core wood having stiles and rails not less than 1 3/8” thick with interior field panels not less than 1 1/4” thick, or have a fire resistance of not less than 20 minutes. Garage doors shall be metal. Windows within doors and glazed doors to comply with Item 4 above. Refer to County Building Code Section 704A.3.2.3.

7. Projections:

Exterior balconies, carports, decks, patio covers, gazebos, unenclosed roofs and floors, and similar architectural appendages and projections shall be of approved non combustible construction, approved fire retardant wood, heavy timber (as defined by the County DPLU Building Division) or one hour fire resistive construction and shall comply with Section 92.1.704A.4.1 and 3 of the County Building Code. Decks shall be designed to resist failing due to the weight of a firefighter during fire conditions. There shall be no plastic or vinyl decking or railings. The ends

of decks shall be enclosed with the same type of material as the remainder of the deck. When such appendages and projections are attached to exterior fire-resistive walls, they shall be constructed to maintain the fire resistive integrity of the exterior wall, and shall have the same fire rating. There shall be no decks or overhangs over slopes.

8.Underfloors areas and appendages shall comply with County Building Code Section 92.1.704A.4.2

9.Awnings/canopies: there shall be no combustible awnings, canopies, or other overhangs.

10.Fencing:

Walls on perimeter private lots will be 2' high block walls with tubular steel. No wood fences on private lots on perimeter

Any wood fencing on internal lots shall not be wood within 5' of structure. It must be non-combustible material or, pressure treated exterior fire-retardant wood or material that has the same fire resistance as the exterior of the structure. A wooden gate may be used, adjacent to the structure, if there is 5' of non-combustible fencing between gate and remainder of fencing on other side of the gate. (Building Code Section 92.1.707.A).

11.Spark Arrestors:

All chimneys and other vents on heating appliances using solid or liquid fuel shall have spark arrestors of a type approved by the Fire District and shall comply with the County of San Diego Consolidated Fire Code. The code requires that openings be maximum 1/2". Arrestors shall be visible from the ground. (Section 96.1.603.6.6; County Fire Code).

12.Dryer and Air conditioning vents on perimeter structures should not face the North or East.

13.Setbacks:

The structures will be set back a minimum of 15', with 20' to the garage, from the front private property line, 10' from the adjoining structure (5' to property line), and approximately 15' at the rear.

14.Location of any LPG tanks (such as for structures, barbeques, patio lights, heaters etc), Firewood, hay storage, storage sheds, barns, outbuildings, etc:

The use of any LPG tanks, and any firewood, hay storage, storage sheds, barns, outbuildings, and other combustibles should be located at least 30'

from structures, and 30' from flammable vegetation. In no case shall any size LPG tank be closer than 10' from the structure.

15. Ancillary structures:

Storage sheds, barns, and outbuildings shall be of approved non-combustible or ignition resistant construction with non-combustible Class A roof assemblies, so as to not ignite and spread fire to the main structures. Such structures shall be located at least 30' from main structure. Additionally, any of the above listed structures, i.e., outbuildings, storage sheds, barns, etc., that are 200 sq ft or more in size, shall be equipped with automatic fire sprinklers.

C-2: SPECIAL ADDITIONAL RECOMMENDATIONS:

C-2-A: MULTI FAMILY AND CONDOMINIUMS

Fire alarm systems shall be provided as required by the County Fire Code.

Major complexes (over 20 units) shall have zoned graphic fire alarm and sprinkler flow annunciator at main entrance.

A lighted directory with a map shall be located at the front side (address side) of all major (over 15 units) multiple family complexes, including any condominium complexes.

The tallest structure is limited to 35 feet. The Fire District cannot reach the roof of a building over 30' high due to lack of an Aerial ladder truck. Therefore, buildings over 30' high shall provide approved access to roofs for firefighters. Other partial mitigations are listed in item 7 on the following page. In addition, fair share funding for Fire District apparatus upgrades will be made as discussed earlier in this plan.

Any underground parking garages in any building shall have fire sprinklers, wet standpipe system, and shall have ventilation/exhaust systems per the Building Code. Stairway access to such garages to be to Fire District approval.

C -2-B: OFFICE BUILDINGS AND COMMERCIAL CENTER

1. KNOX key box required at main entrance to building.
2. Buildings shall not have combustible exterior walls or roofs. Roofs to be Class A rated roof assemblies.

3. Buildings shall be separated from other buildings by at least 28' (or more if required by Code) to allow Firefighter access, and exposure protection.
4. Buildings shall be at least 10' from property lines (or more if required by Codes) to allow firefighter access. More distance may be required if needed to comply with access road recommendations.
5. Buildings shall have firefighter access doors (3' by 6'8") every lineal 100' around perimeter.
6. The tallest structure is limited to 35 feet. The Fire District cannot reach the roof of a building over 30 feet high due to lack of an Aerial ladder truck. Therefore, buildings over 30 feet high shall provide approved access to roofs for firefighters. In addition, fair share funding for District Fire Apparatus upgrades will be provided as discussed earlier in this plan.
7. Additional partial mitigations for height of the office building (35 feet) include an approved wet standpipe system in each stairway and on roof, Two enclosed, interior stairways (one of which goes from ground floor to roof, with exterior entrance on ground floor for firefighter access), approved smoke exhaust system, Firefighter controls for elevators, and one EMS Gurney accessible elevator and a Firefighter command center per the 2007 State Fire Code Section 509.1. This can be an approved 96 square foot multi purpose room (minimum dimension 8') with exterior Firefighter access and which includes alarm annunciation panels, table, chairs, phones, building plans, etc. In addition, the on site fire lane shall be designed to accommodate use of a future aerial ladder truck, or aerial ladder truck from an automatic aid or mutual aid fire agency. Road to be at least 28 ' wide, unobstructed and be located a minimum of 15' and a maximum of 30' from, and parallel to, the highest and largest wall on at least two opposite sides of the building.
8. HVAC systems shall have provisions to be shut off, or recirculated, by Firefighter operation of controls safely accessible in a fire situation, in a manner to not allow smoke to enter the building during an exposing vegetation fire.
9. Developer should record legal document stating there will be no storage or construction within setbacks, and required distances from property line and other buildings, as required by Building Code.
10. Buildings with multiple tenants shall have fire rated demising walls and building unit address numbers/letters clearly displayed on building at entrances to each unit, which shall be exterior entrances. KNOX key box required for each unit.

11. Certain large or unique occupancies may require fire department control rooms, and smoke control/removal systems.
12. Street addresses to comply with County Fire Code.
13. Trash enclosures shall be at least 25' from buildings or enclosed in a Type 1 or 2 fire rated, sprinklered, enclosure at least 10' from building.
14. Exterior storage, including Hazardous Materials and Flammable or Combustible liquids, shall comply with the County Fire Code.
15. All other applicable sections of the County Fire and Building Codes shall be complied with based upon the occupancy type. All tenant improvement plans shall be approved by Fire District and DPLU Building Division prior to occupancy.

C-2-C: SPORTS COMPLEX AND RECREATIONAL COMPLEX:

Detailed plans shall be submitted to the Fire District for the Sports Complex and Recreational Complex when plans are developed. Plans must include applicable fire protection in compliance with this plan for any structures, roads, and vegetation. In addition applicable provisions shall be made for fire hydrants if needed, and for firefighter foot access and ambulance access for EMS emergencies

9. SUMMARY/DISCLAIMER:

This Plan encompasses the latest Fire Code requirements and the recommendations found in the Nationally Accepted Standards of Good Practice. This plan has the objective of complying with the requirements of the North County Fire Protection District and requirements of the San Diego DPLU, San Diego County Fire Authority, County of San Diego Fire Code, County of San Diego Building Code Section 92.1.704, and includes all components of a Fire Protection Plan as required by Section 4703 of the 2007 County Fire Code. All sections of all applicable codes have been complied with. Certain Sections of the Codes have been exceeded based on the Fire Risk Assessment and the recommendations of the consultant. Upon approval of this plan by the NCFPD Fire Marshal, and the DPLU Fire Marshal, any “shoulds” and “shalls” shall become mandatory requirements.

The type of protection proposed reduces the potential vegetation fire threat and should greatly assist the Fire Department in controlling or extinguishing a vegetation fire at this development. The threat of an internal structure fire is reduced by the installation of fire sprinklers and smoke detectors.

As fire is a dynamic and somewhat unpredictable occurrence, this plan does not guarantee that a fire will not occur or will not result in injury, loss of life or loss of

9-1-06: Conceptual Fire Protection Plan; Campus Park Development; Fallbrook, by Hunt Research Corporation (revised 3-12-07, 6-18-08, 4-30-09, 9-14-09)

property. No guarantees are made, expressed or implied, regarding the adequacy or effectiveness of the recommendations or requirements in this plan in all fire situations.

Engineering, Architectural services, sprinkler system design, engineering, landscape architecture, and other design work, and construction, are out of the scope of this plan. The developer, contractors, engineers, sprinkler designers, and architects are responsible for proper implementation of the concepts and requirements set forth in this plan. Detailed plans for all occupancies will be submitted when developed and before construction.

Homeowners are responsible to maintain their structures and lots as required by this plan, the Fire District, and as required by the Fire Code. Alternative methods of compliance with this plan can be submitted to the Fire District Fire Marshal for consideration.

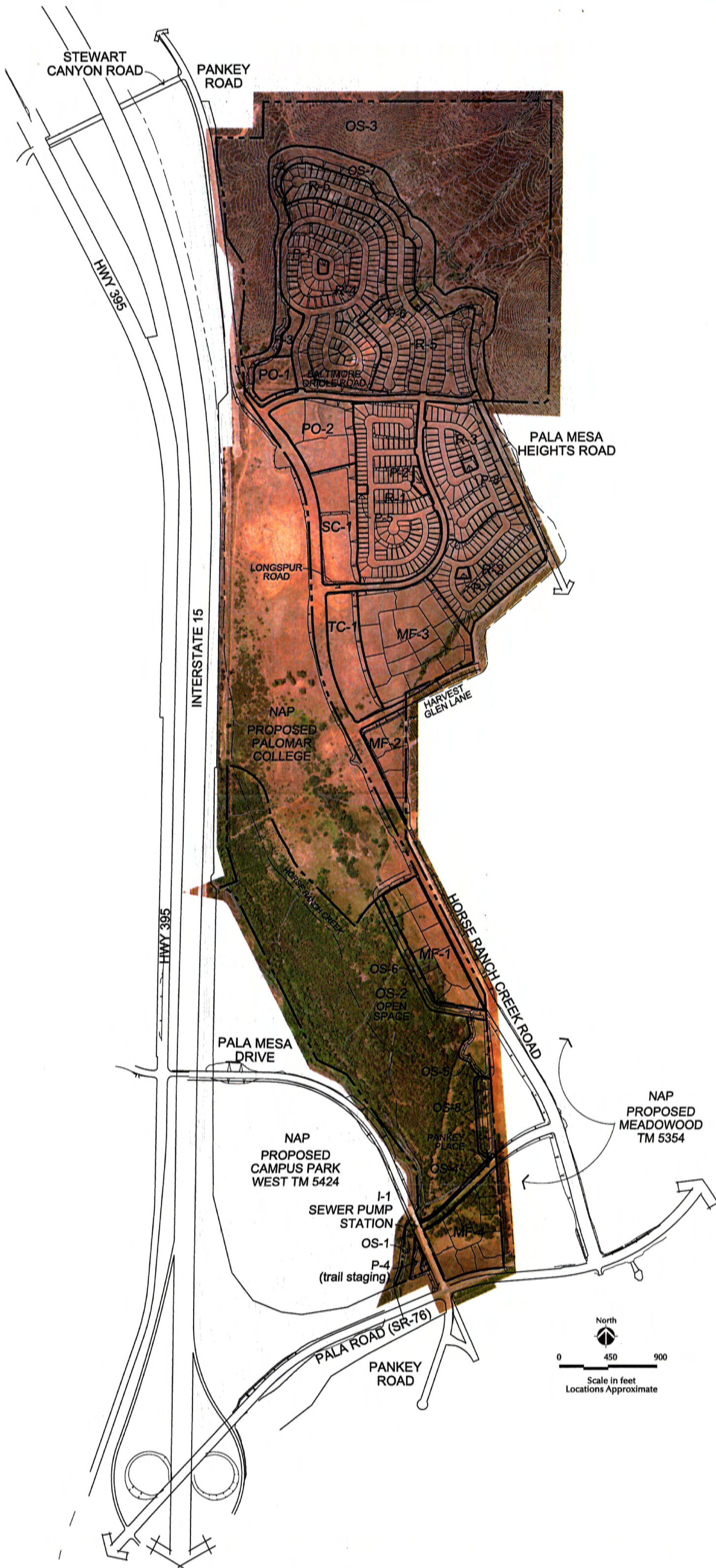
It will be extremely important for all homeowners, building owners, property managers, and occupants to comply with this plan on their property. The Homeowners Association will be responsible for ongoing enforcement of the Vegetation Management requirements found in this plan. Such requirements should be made a part of deed encumbrances and CC and R's for each lot.

Appendix:

- A. Tract Map
- B. Conceptual Perimeter Fuel Modification Drawing
- C. Proposed Land Use plan.
- D. Site photos
- E. North County Fire Protection District approval letter; 9-9-09
- F. San Diego County Fire Authority/DPLU Fire Marshal letter; 7-9-09
- G. Behave fire spread models

*9-1-06: Conceptual Fire Protection Plan; Campus Park Development; Fallbrook, by
Hunt Research Corporation (revised 3-12-07, 6-18-08, 4-30-09, 9-14-09)*

A. TRACT MAP



*9-1-06: Conceptual Fire Protection Plan; Campus Park Development; Fallbrook, by
Hunt Research Corporation (revised 3-12-07, 6-18-08, 4-30-09, 9-14-09*

B. CONCEPTUAL PERIMETER FUEL MODIFICATION DRAWING

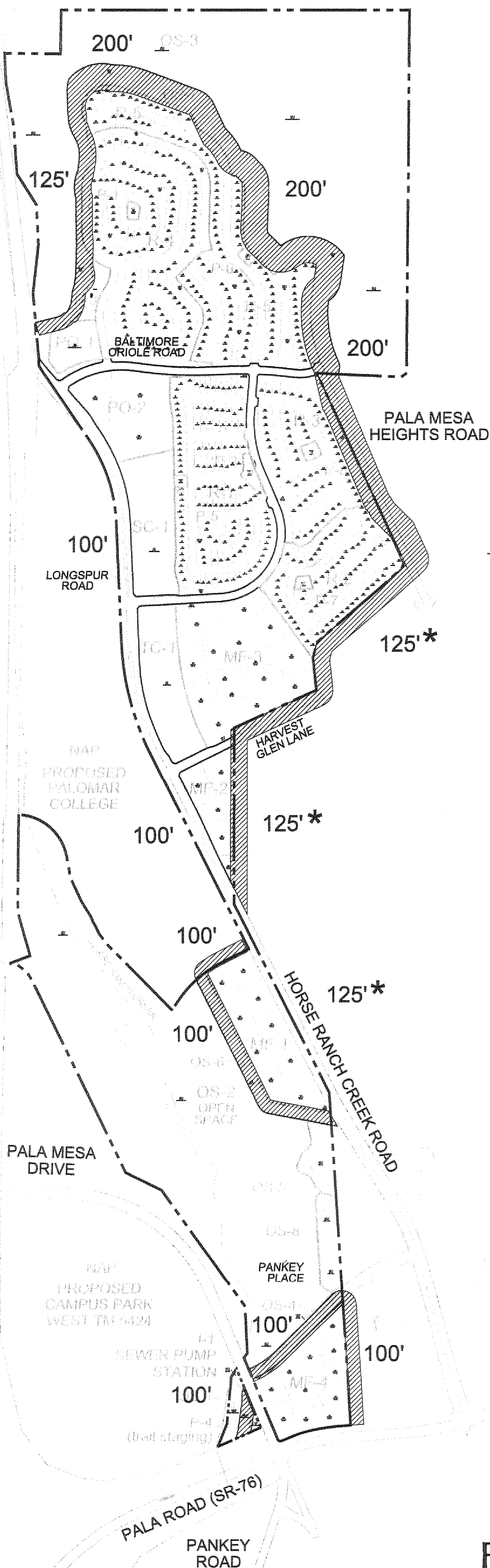
STEWART
CANYON ROAD

PANKEY
ROAD

HWY 395

INTERSTATE 15

HWY 395



LEGEND



Perimeter Fuel Management
Zones - Measured from Structure
(size indicated by location)



125' Unless adjacent development
has abutting Off-Site Fuel
Modification Zone

Note:

1. Roadside & internal lot Fuel
Modification Zones not shown.
See Plan for details.

2. This plan is a conceptual
depiction of Fuel Management areas
and subject to change.

North



0 650 1300

Scale in feet
Locations Approximate

03-30-2009

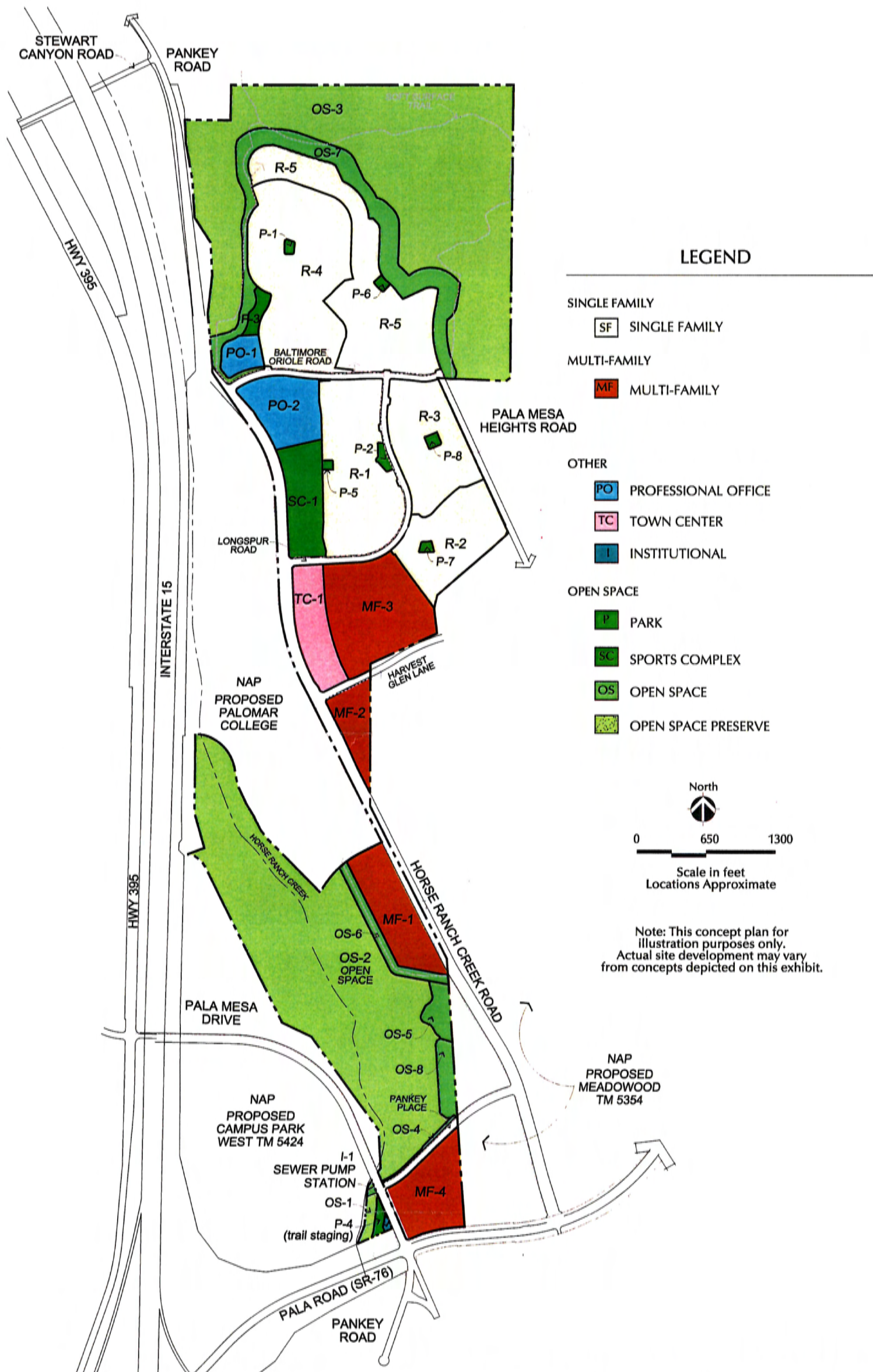
Note: This concept plan for
illustration purposes only.
Actual site development may vary
from concepts depicted on this exhibit.

CONCEPTUAL FUEL MANAGEMENT PLAN

CAMPUS PARK

*9-1-06: Conceptual Fire Protection Plan; Campus Park Development; Fallbrook, by
Hunt Research Corporation (revised 3-12-07, 6-18-08, 4-30-09, 9-14-09*

C. PROPOSED LAND USE PLAN



PROPOSED LAND USE PLAN

CAMPUS PARK SPECIFIC PLAN AMENDMENT & GENERAL PLAN AMENDMENT REPORT

FIGURE 10
 DRAFT: 3/18/09

*9-1-06: Conceptual Fire Protection Plan; Campus Park Development; Fallbrook, by
Hunt Research Corporation (revised 3-12-07, 6-18-08, 4-30-09, 9-14-09)*

D. SITE PHOTOS

*9-1-06: Conceptual Fire Protection Plan; Campus Park Development; Fallbrook, by
Hunt Research Corporation (revised 3-12-07, 6-18-08, 4-30-09, 9-14-09)*

**Top photo: looking north from edge of Pankey Road, near south end of
development.**

Bottom photo: General view of property from across I-15



*9-1-06: Conceptual Fire Protection Plan; Campus Park Development; Fallbrook, by
Hunt Research Corporation (revised 3-12-07, 6-18-08, 4-30-09, 9-14-09)*

Top photo: View of property from across I-15

Bottom photo: View of some on site vegetation



*9-1-06: Conceptual Fire Protection Plan; Campus Park Development; Fallbrook, by
Hunt Research Corporation (revised 3-12-07, 6-18-08, 4-30-09, 9-14-09)*

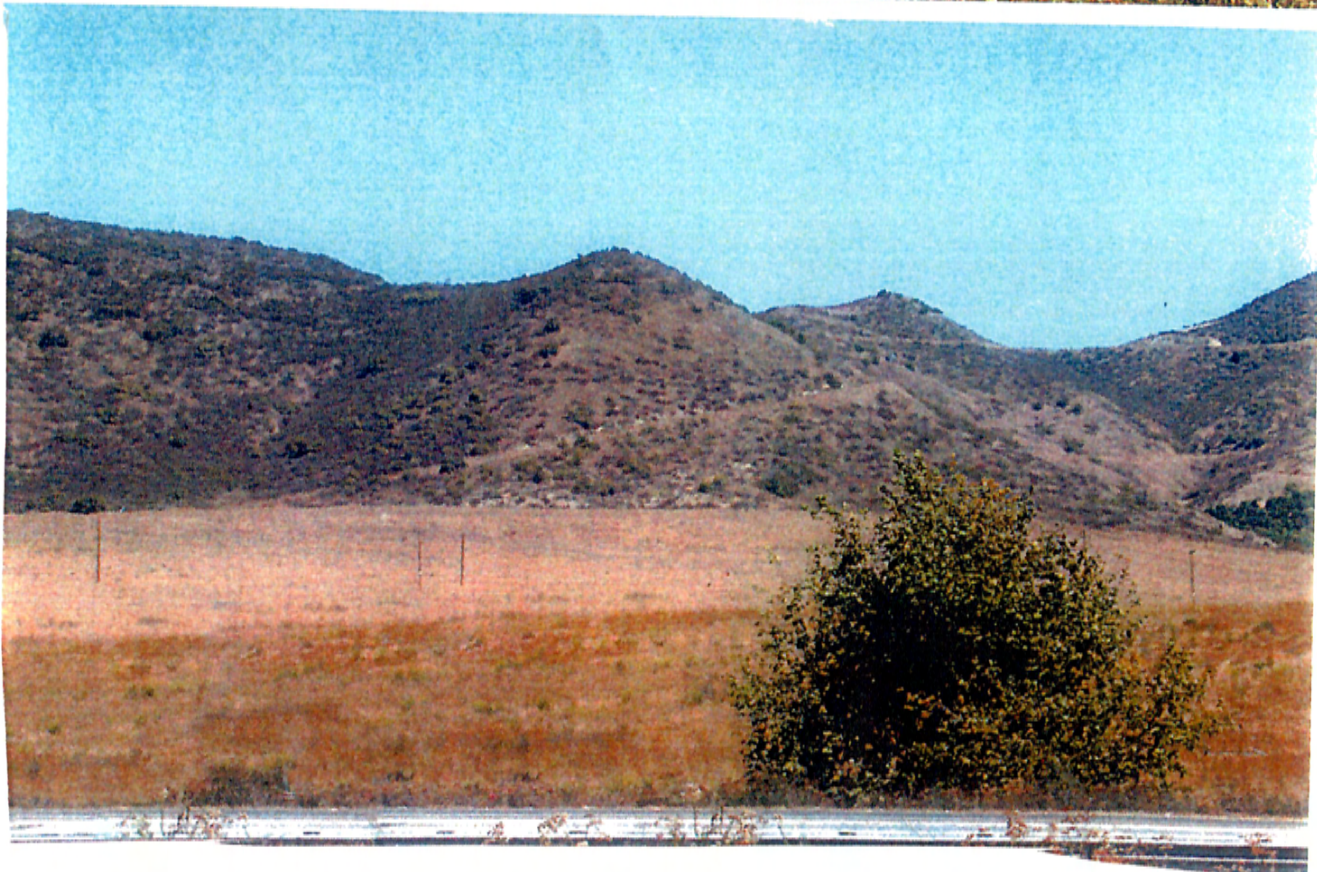
**Top photo: View looking northeast from southern portion of property
off Pankey Road**

**Bottom photo: Vegetation off Pankey road at southern portion of
project; looking southeast**



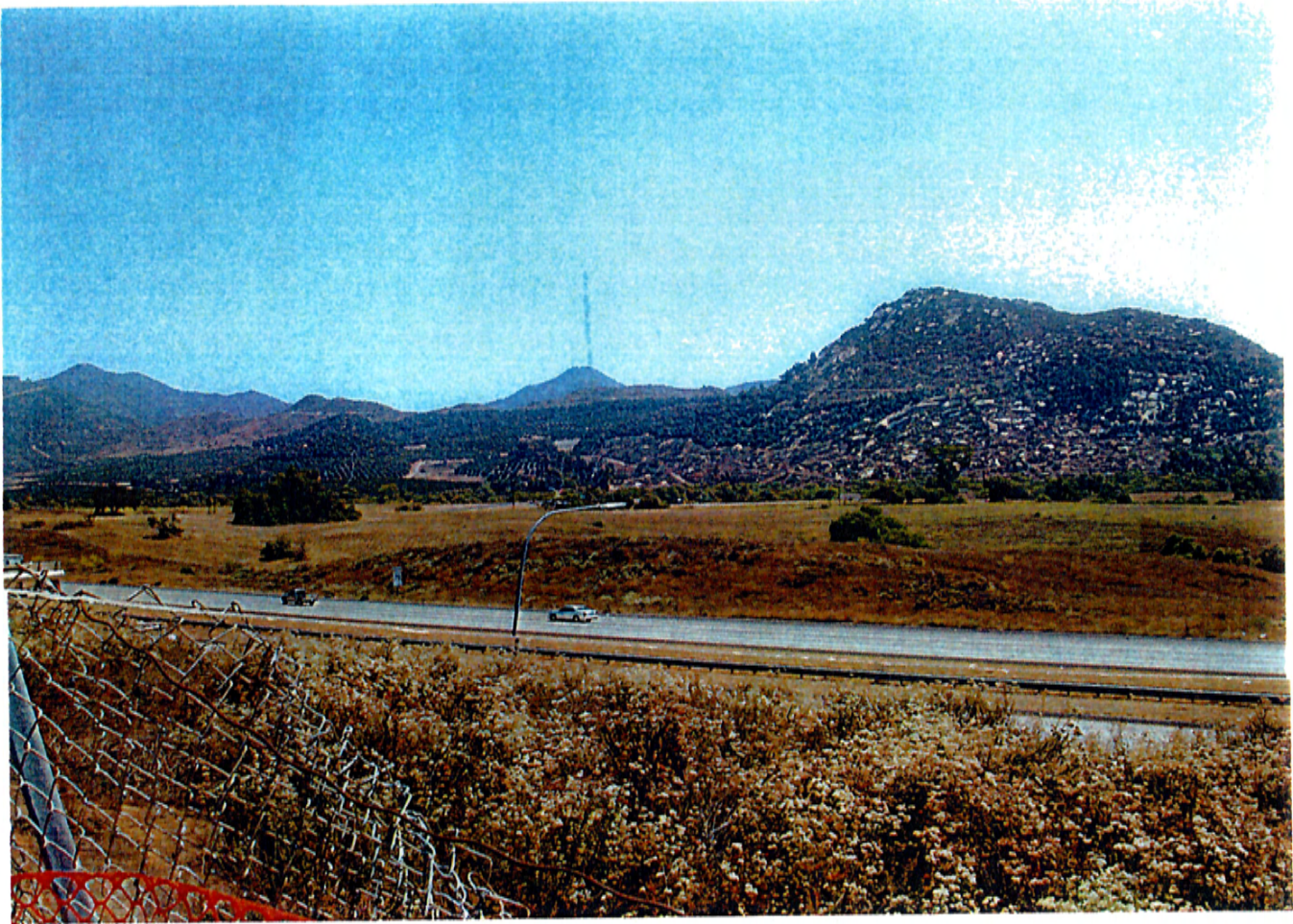
*9-1-06: Conceptual Fire Protection Plan; Campus Park Development; Fallbrook, by
Hunt Research Corporation (revised 3-12-07, 6-18-08, 4-30-09, 9-14-09)*

**Top and bottom photos: Looking across I-15 at general area in
Northeast portion of development**



*9-1-06: Conceptual Fire Protection Plan; Campus Park Development; Fallbrook, by
Hunt Research Corporation (revised 3-12-07, 6-18-08, 4-30-09, 9-14-09)*

Photo looking northeast across development from across I-15.



*9-1-06: Conceptual Fire Protection Plan; Campus Park Development; Fallbrook, by
Hunt Research Corporation (revised 3-12-07, 6-18-08, 4-30-09, 9-14-09)*

E. NORTH COUNTY FIRE PROTECTION DISTRICT APPROVAL

NORTH COUNTY FIRE PROTECTION DISTRICT

330 S. Main Avenue • Fallbrook, California 92028 • (760) 723-2005 • Fax (760) 723-2004 • www.ncfire.org

BOARD OF DIRECTORS

RUTH HARRIS
WAYNE HOOPER
KENNETH E. MUNSON, President
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KATHLEEN THUNER, Vice President

WILLIAM R. METCALF - Fire Chief/CEO
ROBERT H. JAMES - Counsel
LOREN A. STEPHEN-PORTER - Board Secretary

September 9, 2009

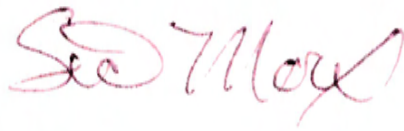
County of San Diego
Department of Planning and Land Use
5201 Ruffin Road, Ste. B.
San Diego, CA. 92123-1666

RE: TM 5338

Please review the following comments regarding this project:

This agency accepts the revised fire protection plan dated 4-30-09 by the Hunt Research Corporation along with County Fire Marshal's analysis of the travel time.

Please feel free to contact me if you have any questions,



Sid Morel
Fire Marshal



PROUDLY SERVING THE COMMUNITIES OF FALLBROOK, BONSALE AND RAINBOW

*9-1-06: Conceptual Fire Protection Plan; Campus Park Development; Fallbrook, by
Hunt Research Corporation (revised 3-12-07, 6-18-08, 4-30-09, 9-14-09*

**F.SAN DIEGO COUNTY FIRE AUTHORITY/ DPLU FIRE MARSHAL LETTER;
7-9-09.**



ERIC GIBSON
DIRECTOR

County of San Diego

DEPARTMENT OF PLANNING AND LAND USE FIRE SERVICES SECTION

5201 RUFFIN ROAD, SUITE B, SAN DIEGO, CALIFORNIA 92123-1666
INFORMATION (858) 694-2960
TOLL FREE (800) 411-0017
www.sdcountry.ca.gov/dplu

July 9, 2009

County of San Diego
Department of Planning and Land Use
5201 Ruffin Road, Suite B
San Diego, CA 92123

Attn: Dennis Campbell, project planner

RE: TM 5338 Campus Park development
Fire Protection Plan (FPP)
North County Fire Protection District
Fire Protection Plan - incomplete

We have reviewed a revised Full Report FPP dated June 4, 2009, prepared by Hunt Research Corporation, for consistency with CCR Title 24 part 9 (California Fire Code), the County Fire Code which adopts and modifies the State Fire Code, and CCR Title 14 (State Responsibility Area) Fire Safe Regulations. The project is located in High and Very High Fire Hazard Severity Zone, and in State Responsibility Area (SRA).

GENERAL PLAN CONFORMANCE

The project is located within the jurisdictional boundary of North County Fire Protection District (NCFPD). Travel time category for this use is "town" category, based on lot size. This office recently calculated emergency travel time based on the latest road patterns for this and adjoining projects, and found it to be consistent with General Plan Public Facilities Element (GP) requirements when those roads are completed. (See further comment in this letter.)

It is a prerequisite that all roads serving the project from NCFPD Station 4 and within must be completed prior to building permit issuance. Any construction phasing must be analyzed by the County Fire Marshal to insure GP conformance (and Title 14 compliance.)

MAXIMUM DEAD-END LENGTH

The project as designed meets CCR Title 14 maximum dead-end length requirements for lots of this size, with a maximum length not exceeding 800 feet, measured from the first opportunity to evacuate in two directions to the most remote turnaround.

CORRECTIONS AND CLARIFICATIONS

Section 3 – Fire District Response – (Travel Time) - As identified above, GP travel time category for this use is “town” category, based on lot size. This office recently calculated emergency travel time based on the latest road patterns for this and adjoining projects using NFPA 1142 formula at 45 MPH from Station 4 north on Old Hwy 395 to Stewart Canyon, then 35 MPH for the remainder of the response, and found travel time to lot 451 to be 5.13 minutes, which this office considers generally consistent with General Plan Public Facilities Element requirements (when those roads are completed). Travel time using Pala Mesa Drive (current design) east from Station 4, then south, east, and north using Horse Ranch Creek Road to the southern portions of the project is acceptable by our calculations.

The “Fire Response Time Exhibit” dated July 25, 2008 by Helix Environmental/Latitude 33 relies on a road design through Campus Park West (TM 5424) which has subsequently been revised, and uses average speeds greater than this office considers appropriate, given the intensity of uses along Horse Ranch Creek route. We do not accept the July 25, 2008 computation. Please remove the appendix exhibit and references on page 4, top paragraph. You may reference the results we generated above, and this office’s determination that the travel time of 5.13 minutes as generally consistent with the General Plan Public Facilities Element requirements.

NCFPD Fire Marshal Morel’s letter dated June 25, 2009 regarding an adjacent project using the same road patterns requires a digital submission of the access roads including specific detail. Please contact Chief Morel to see if the County Fire Marshal’s analysis will be sufficient to fulfill this requirement of the local fire authority.

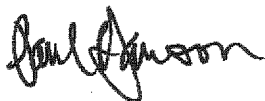
As of this date, we have not received a letter from NCFPD evaluating the latest iteration of the FPP. All issues they identify must be resolved to the satisfaction of NCFPD and incorporated into a revised FPP. A copy of their letter accepting the revised FPP should be included as an appendix.

Update Version Identification – The FPP cover page shows a revision date of June 4, 2009, but the interior pages that follow show April 30, 2009. Please revise to show the correct revision date on each page.

REVISED FPP FORMAT

A Revised FPP addressing the issues above should be prepared in a “strikeout/underline” format, along with a “clean copy” format. The revised FPP should first be submitted to the North County Fire Protection District for their review and acceptance. A copy of their comments and acceptance must be included in the re-submittal.

Please submit the number of copies (in both formats) as required by the project planner to DPLU Project Processing Counter.

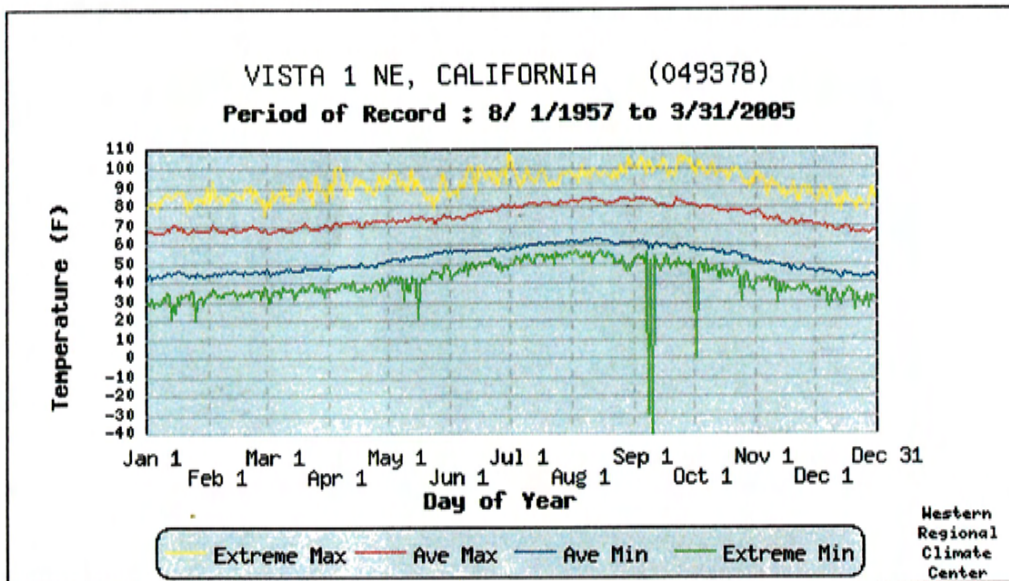
A handwritten signature in black ink, appearing to read "Paul Dawson".

Paul Dawson, Fire Marshal
San Diego County Fire Authority
Department of Planning and Land Use

c: Fire Marshal Sid Morel, North County FPD

*9-1-06: Conceptual Fire Protection Plan; Campus Park Development; Fallbrook, by
Hunt Research Corporation (revised 3-12-07, 6-18-08, 4-30-09, 9-14-09*

G. BEHAVE FIRE SPREAD MODELS



Modules: SURFACE, SPOT, IGNITE

Description		Campus summer FM Sh7
Fuel/Vegetation, Surface/Understory		
Fuel Model		sh7
Fuel/Vegetation, Overstory		
Canopy Height	ft	6
Fuel Moisture		
1-h Moisture	%	2
10-h Moisture	%	2
100-h Moisture	%	3
Live Herbaceous Moisture	%	
Live Woody Moisture	%	80
Weather		
20-ft Wind Speed (upslope)	mi/h	20
Wind Adjustment Factor		0.5
Air Temperature	oF	100
Fuel Shading from the Sun	%	0
Terrain		
Slope Steepness	%	0
Ridge-to-Valley Elevation Difference	ft	0
Ridge-to-Valley Horizontal Distance	mi	
Spotting Source Location		

Run Option Notes

Calculations are only for the direction of maximum spread [SURFACE].

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations [SURFACE].

Wind is blowing upslope [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ch/h) [SURFACE]

Flame Length (ft) [SURFACE]

Midflame Wind Speed (upslope) (mi/h) [SURFACE]

Max Eff Wind Exceeded? [SURFACE]

Spot Dist from Wind Driven Surface Fire (mi) [SPOT]
(continued on next page)



Campus summer FM Sh7

Surface Rate of Spread (maximum)	113.8 ch/h
Flame Length	23.8 ft
Midflame Wind Speed (upslope)	10.0 mi/h
Max Eff Wind Exceeded?	No
Spot Dist from Wind Driven Surface Fire	0.8 mi
Probability of Ignition from a Firebrand	100 %

1.4 m/s

Modules: SURFACE, SPOT, IGNITE

Description		campus-summer Fm4
Fuel/Vegetation, Surface/Understory		
Fuel Model		4
Fuel/Vegetation, Overstory		
Canopy Height	ft	6
Fuel Moisture		
1-h Moisture	%	2
10-h Moisture	%	2
100-h Moisture	%	3
Live Herbaceous Moisture	%	
Live Woody Moisture	%	80
Weather		
20-ft Wind Speed (upslope)	mi/h	20
Wind Adjustment Factor		0.5
Air Temperature	oF	100
Fuel Shading from the Sun	%	0
Terrain		
Slope Steepness	%	0
Ridge-to-Valley Elevation Difference	ft	0
Ridge-to-Valley Horizontal Distance	mi	
Spotting Source Location		

Run Option Notes

Calculations are only for the direction of maximum spread [SURFACE].

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations [SURFACE].

Wind is blowing upslope [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ch/h) [SURFACE]

Flame Length (ft) [SURFACE]

Midflame Wind Speed (upslope) (mi/h) [SURFACE]

Max Eff Wind Exceeded? [SURFACE]

Spot Dist from Wind Driven Surface Fire (mi) [SPOT]
(continued on next page)

campus-summer Fm4

Surface Rate of Spread (maximum)	288.8 ch/h
Flame Length	40.0 ft
Midflame Wind Speed (upslope)	10.0 mi/h
Max Eff Wind Exceeded?	No
Spot Dist from Wind Driven Surface Fire	1.2 mi
Probability of Ignition from a Firebrand	100 %

3.6x74

Modules: SURFACE, SPOT, IGNITE

Description		Campus summer FM 3
Fuel/Vegetation, Surface/Understory		
Fuel Model		3
Fuel/Vegetation, Overstory		
Canopy Height	ft	3
Fuel Moisture		
1-h Moisture	%	2
10-h Moisture	%	
100-h Moisture	%	
Live Herbaceous Moisture	%	
Live Woody Moisture	%	
Weather		
20-ft Wind Speed (upslope)	mi/h	20
Wind Adjustment Factor		0.3
Air Temperature	oF	100
Fuel Shading from the Sun	%	0
Terrain		
Slope Steepness	%	0
Ridge-to-Valley Elevation Difference	ft	0
Ridge-to-Valley Horizontal Distance	mi	
Spotting Source Location		

Run Option Notes

Calculations are only for the direction of maximum spread [SURFACE].

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations [SURFACE].

Wind is blowing upslope [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ch/h) [SURFACE]

Flame Length (ft) [SURFACE]

Midflame Wind Speed (upslope) (mi/h) [SURFACE]

Max Eff Wind Exceeded? [SURFACE]

Spot Dist from Wind Driven Surface Fire (mi) [SPOT]
(continued on next page)

Campus summer FM 3

Surface Rate of Spread (maximum)	227.9 ch/h
Flame Length	20.6 ft
Midflame Wind Speed (upslope)	6.0 mi/h
Max Eff Wind Exceeded?	No
Spot Dist from Wind Driven Surface Fire	0.8 mi
Probability of Ignition from a Firebrand	100 %

0.8 mi/h

Modules: SURFACE, SPOT, IGNITE

Campus-Cedar Sh7

Description		
Fuel/Vegetation, Surface/Understory		
Fuel Model		sh7
Fuel/Vegetation, Overstory		
Canopy Height	ft	6
Fuel Moisture		
1-h Moisture	%	2
10-h Moisture	%	2
100-h Moisture	%	2
Live Herbaceous Moisture	%	
Live Woody Moisture	%	60
Weather		
20-ft Wind Speed (upslope)	mi/h	50
Wind Adjustment Factor		0.5
Air Temperature	oF	95
Fuel Shading from the Sun	%	0
Terrain		
Slope Steepness	%	0
Ridge-to-Valley Elevation Difference	ft	0
Ridge-to-Valley Horizontal Distance	mi	
Spotting Source Location		

Run Option Notes

Calculations are only for the direction of maximum spread [SURFACE].

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations [SURFACE].

Wind is blowing upslope [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ch/h) [SURFACE]

Flame Length (ft) [SURFACE]

Midflame Wind Speed (upslope) (mi/h) [SURFACE]

Max Eff Wind Exceeded? [SURFACE]

Spot Dist from Wind Driven Surface Fire (mi) [SPOT]
(continued on next page)

Campus-Cedar Sh7

Surface Rate of Spread (maximum)	416.7 ch/h
Flame Length	43.9 ft
Midflame Wind Speed (upslope)	25.0 mi/h
Max Eff Wind Exceeded?	No
Spot Dist from Wind Driven Surface Fire	2.4 mi
Probability of Ignition from a Firebrand	100 %

5.23 mi/h



Modules: SURFACE, SPOT, IGNITE

Description		campus-cedar Fm4
Fuel/Vegetation, Surface/Understory		
Fuel Model		4
Fuel/Vegetation, Overstory		
Canopy Height	ft	6
Fuel Moisture		
1-h Moisture	%	2
10-h Moisture	%	2
100-h Moisture	%	2
Live Herbaceous Moisture	%	
Live Woody Moisture	%	60
Weather		
20-ft Wind Speed (upslope)	mi/h	50
Wind Adjustment Factor		0.5
Air Temperature	oF	95
Fuel Shading from the Sun	%	0
Terrain		
Slope Steepness	%	0
Ridge-to-Valley Elevation Difference	ft	0
Ridge-to-Valley Horizontal Distance	mi	
Spotting Source Location		

Run Option Notes

Calculations are only for the direction of maximum spread [SURFACE].

Fireline intensity, flame length, and spread distance are always
for the direction of the spread calculations [SURFACE].

Wind is blowing upslope [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ch/h) [SURFACE]
Flame Length (ft) [SURFACE]
Midflame Wind Speed (upslope) (mi/h) [SURFACE]
Max Eff Wind Exceeded? [SURFACE]
Spot Dist from Wind Driven Surface Fire (mi) [SPOT]
(continued on next page)



campus-cedar Fm4

Surface Rate of Spread (maximum)	1272.8 ch/h
Flame Length	80.6 ft
Midflame Wind Speed (upslope)	25.0 mi/h
Max Eff Wind Exceeded?	No
Spot Dist from Wind Driven Surface Fire	3.7 mi
Probability of Ignition from a Firebrand	100 %

15.9 mph



Modules: SURFACE, SPOT, IGNITE

Description		Campus Cedar FM 3
Fuel/Vegetation, Surface/Understory		
Fuel Model		3
Fuel/Vegetation, Overstory		
Canopy Height	ft	3
Fuel Moisture		
1-h Moisture	%	2
10-h Moisture	%	
100-h Moisture	%	
Live Herbaceous Moisture	%	
Live Woody Moisture	%	
Weather		
20-ft Wind Speed (upslope)	mi/h	50
Wind Adjustment Factor		0.3
Air Temperature	oF	95
Fuel Shading from the Sun	%	0
Terrain		
Slope Steepness	%	0
Ridge-to-Valley Elevation Difference	ft	0
Ridge-to-Valley Horizontal Distance	mi	
Spotting Source Location		

Run Option Notes

Calculations are only for the direction of maximum spread [SURFACE].

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations [SURFACE].

Wind is blowing upslope [SURFACE].

Output Variables

Surface Rate of Spread (maximum) (ch/h) [SURFACE]

Flame Length (ft) [SURFACE]

Midflame Wind Speed (upslope) (mi/h) [SURFACE]

Max Eff Wind Exceeded? [SURFACE]

Spot Dist from Wind Driven Surface Fire (mi) [SPOT]
(continued on next page)



Campus Cedar FM 3

Surface Rate of Spread (maximum)	741.4 ch/h
Flame Length	35.5 ft
Midflame Wind Speed (upslope)	15.0 mi/h
Max Eff Wind Exceeded?	No
Spot Dist from Wind Driven Surface Fire	2.1 mi
Probability of Ignition from a Firebrand	100 %

9.2 mph

CAMPUS PARK PROJECT

APPENDIX K

MINERAL RESOURCE TECHNICAL REPORT

SPA 03-008, GPA 03-004, R03-014, VTM 5338 RPL6,
S 07-030, S 07-031, LOG No. 03-02-059, SCH No. 2005011092

for the

DRAFT SUBSEQUENT ENVIRONMENTAL IMPACT REPORT

SEPTEMBER 2009

MINERAL RESOURCE TECHNICAL REPORT,
CAMPUS PARK PROPERTY, FALLBROOK AREA
OF SAN DIEGO COUNTY, CALIFORNIA
(ENVIRONMENTAL LOG NO. _____)

Prepared for:

**COUNTY OF SAN DIEGO,
DEPARTMENT OF LAND USE**

c/o Passerelle LLC, Inc.
402 West Broadway, Suite 1320
San Diego, California 92101

Project No. 042343-001

July 2, 2008

Revised April 2, 2009



Leighton and Associates, Inc.

A LEIGHTON GROUP COMPANY



Leighton and Associates, Inc.

A LEIGHTON GROUP COMPANY

July 2, 2008
(Revised April 2, 2009)

Project No. 042343-001

To: County of San Diego Department of Land Use
c/o Passerelle LLC, Inc.
402 West Broadway, Suite 1320
San Diego, California 92101

Attention: Mr. David Davis

Subject: Mineral Resource Technical Report, Campus Park Property, Fallbrook Area of San
Diego County, California (Environmental Log No. _____)

In accordance with your request, we have performed a review and prepared this Mineral Resource Technical Report for the Campus Park property located in San Diego County, California. This report has been prepared for the County of San Diego, per the County of San Diego Land Use and Environment Group's Guidelines for Mineral Resource Technical Report Format and Content requirements.

If you have any questions regarding our report, please contact this office. We appreciate this opportunity to be of service.

Respectfully submitted,

LEIGHTON AND ASSOCIATES, INC.

Michael R. Stewart, CEG 1349
Principal Geologist, Vice President



Distribution: (4) Addressee

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- Figure 5 - Regional Geologic Map - Rear of Text
- Figure 6 - MRZ-2 Mineral Resource Zones - Rear of Text
- Figure 7 - Setbacks from Existing Residential Properties - Rear of Text



1.0 EXECUTIVE SUMMARY

In accordance with your request and authorization, this report presents the results of our review and assessment of the mineral resources for the approximately 417-acre Campus Park property in the Fallbrook area of northern San Diego County, Site Location Map Figure 1. This report has been prepared for the County of San Diego, per the County of San Diego Land Use and Environment Group's Guidelines for Mineral Resource Technical Report Format and Content requirements. The scope of services included review of the site location relative to the current Mineral Resource Zonation (MRZ) and designations per the California Surface Mining and Reclamation Act (SMARA) of 1975.

Topographically, the site generally consists of a gently sloping hillside terrain that drains to a broad drainage that gently slopes towards the San Luis Rey drainage basin to the southwest. The site geology consists of older terrace deposits with weathered bedrock with sparse rock outcrops in the elevated areas to the east. The lower elevations and southern portion include accumulations of alluvial soils that include loose clays, silts, sands and lesser amounts of gravels. The San Luis Rey River valley located off site to the south contains known mineral deposits that have been locally mined nearby. As a result, this offsite area is designated as MRZ-2 by the California Geological Survey. The western portions of the Campus Park site has been mapped as a MRZ-3 area which means it is an area containing mineral significance of which cannot be completely evaluated from existing data. The remaining area and the majority of the site are not mapped by the state as a Mineral Resource Zone. The property boundaries and extent of mapped mineral resource zones are shown on Figure No. 2, State Mapped Mineral Resource Zones.

We are not aware of any previous onsite mining operations. Successful sand and gravel mining operations are well documented along the San Luis Rey River drainage, and at least 5 sites have historically been mined within a few miles of the Campus Park property. All but one (the Pankey Ranch/Rosemary Mountain site) have been terminated when they were unable to get permits to continue to mine primarily due to environmental reasons.



2.0 INTRODUCTION

2.1 Purpose and Scope

This report presents the results of our review and assessment of the mineral resources for the approximately 417-acre Campus Park property in the Fallbrook area of northern San Diego County. The scope of services included:

- A review of in-house geotechnical reports and aerial photographs pertinent to the area (Appendix A, rear of text).
- Review of readily available geotechnical reports for properties in the same general area.
- A reconnaissance of the site.
- Review of the site location relative to the current Mineral Resource Zonation (MRZ) and designations per the California Surface Mining and Reclamation Act (SMARA) of 1975.
- Preparation of this report summarizing the results of our technical study, including:
 - A discussion of the MRZ's located on, adjacent, and within the vicinity of the project site.
 - A discussion of all mine; quarries, and gemstone deposits (both historic and existing) within the vicinity of the project.
 - A discussion of the regional and local geologic setting as it pertains to any mineral resources identified.
 - Analysis of onsite and offsite impacts to the mineral resource, including indication of whether any mineral resources on the project are now or would be minable, processable, and marketable in the near future. This analysis includes both existing and proposed conditions.
 - A discussion of the economic value and significance of any impacts (if present) considering land-use compatibility with the proposed project.
 - A discussion of any appropriate mitigation measures and project design considerations.



2.2 Project Location and Description

The property is located northeast of the interchange of the Pala Road (SR-76) and the Interstate 15 (Figure 1) in the Fallbrook area of San Diego County. The Campus Park Land Plan as it currently exists proposes to develop fourteen planning areas integrating residential, recreational and open space land uses within the 417-acre area. The project is to include 1,082 dwelling units including a combination of single-family and multi-family dwellings with some office/retail space. In addition, the project would also include a sports complex, neighborhood parks, associated community facilities and infrastructure, and open-space areas.

It is anticipated the development of the site will be accomplished with mass grading, with cuts in the higher elevations and fill areas anticipated in lower site areas. Figure 3 (rear of text) illustrates approximate parcel boundaries, over an aerial photographic base. Figure 4 is a composite land plan showing proposed land usage in the area including the adjacent Campus Park and Palomar Community College District properties.



3.0 EXISTING CONDITIONS

3.1 Topographic Setting

The site is located within the coastal subprovince of the Peninsular Ranges Geomorphic Province, near the western edge of the southern California batholith. The topography at the edge of the batholith changes from the rugged landforms developed on the batholith to the more subdued landforms, which typify the softer sedimentary formations of the coastal plain. Primarily, the site is underlain by the Quaternary-aged Older Alluvium/Terrace deposit over granitic rocks of the southern California batholith with younger alluvial deposits along the western margin. Erosion and regional tectonic uplift created the valleys and ridges of the area.

Generally, natural drainage is presently accomplished through a broad canyon that drains in a south westward direction. Vegetation on the site is generally sparse with localized chaparral and sage scrub in the upper elevations. Some of the lower elevations have generally been cultivated. Portions of the alluvial areas in the southern half of the site are thickly vegetated.

3.2 Land Use

The proposed land use will consist of a residential community with a mix of Single-family detached, multi-family detached and multi-family attached, professional and retail space with supporting infrastructure and open space. A sewer pump station is proposed in the southwest corner of the site adjacent to SR 76.

Adjacent developments will include the proposed Palomar College, Campus Park West, and Meadowood Developments. The extent of these adjacent developments are shown on the attached Figure No. 4. These adjacent developments also include the proposed Horse Ranch Creek Road which diagonally crosses the Campus Park Property and the Pala Mesa Drive and Pankey Place Road connecting to Horse Ranch Creek Road. All of these roads are part of the regional traffic plan and the Pala Mesa Drive provides access across the existing bridge over I-15 to the fire station just west of the freeway. It is also our understanding that Palomar College which is close to receiving its final approvals will construct a portion of Horse Ranch Creek Road along its length through the Campus Park property to SR-76. SR-76 to the east is to be relocated by others to the south as part of improvements related to the Rosemary's Mountain Quarry. We also note that the proposed locations of both SR-76 and Horse Ranch Creek Road are in part controlled by adjacent habitat issues and archeological sites.



3.3 Geology

Based on our site visit and review of our referenced geologic maps (Appendix A), the primary bedrock unit on site is a highly weathered Cretaceous-aged Gabbroic rock. Older and younger alluvial deposits mantle large areas of the site. The generalized geologic map units are illustrated as shown on Figure 5, based on mapping published by the California Geologic Survey (CGS, 2000a and 2000b). The following is a discussion of the generalized geologic units underlying and adjacent to the site.

3.3.1 Active (younger) Alluvium (Map Symbol-Qa)

Holocene-aged (younger than 10,000 years old), alluvial deposits are mapped in the low-lying drainages of the property, generally in the southwestern portion. These unconsolidated (loose) clays, silts, sands have accumulated in the lower-most drainages. The area has been mapped as MRZ-3 by the State, however, the geologic unit in this area is the same as the unit within the San Luis Rey River Valley which has been mapped as MRZ-2. For purposes of this report, the active (younger) alluvium in this area is assumed to be of MRZ-2 quality.

3.3.2 Older Alluvium/Terrace Deposits (Map Symbol-Qoa)

Older alluvium/Terrace Deposits (younger than 500,000 years old) mantle the west flank of the site in central portions. These sediments are differentiated from the younger deposits due to a greater degree of consolidation. For example, these deposits tend to be weakly cemented and poorly sorted, commonly containing interfingering silts, clays, and fine sands that have been consolidated with age. Such deposits are also mapped to the southwest of the site, comprising the Pala Mesa. These deposits commonly support such developments, as they traditionally form relatively flat terraces of gently topographic relief elevated above the alluvial valley bottoms. Older alluvial deposits are generally not classified as MRZ-2 outright due to their variable composition, and fine-grained component. These areas are currently mapped as MRZ-3 (Figure No. 2).



3.3.3 San Marcos Gabbro Rock (Map Symbol-Kgb)

Monserate Mountain, and the northern portion of the Campus Park property is underlain by a fine-grained, dark gray igneous rock, or gabbro, based on the regional geologic map (Figure 5). Through much of the map area, surficial deposits of colluvium, alluvium, and slopewash are generally minor and not considered thick enough to be significant at the map scale presented.

The gabbroic unit (Kgb) comprises Monserate Mountain, as well as much of the San Marcos Mountains, to the south. These units are typically highly weathered and because they contain low amounts of silica (quartz) no significant aggregate extraction operations are known to have operated in this unit in the Monserate Mountain area. Portions of the unweathered gabbroic rock of the San Marcos Mountains 8 to 10 miles southwest of the site has been utilized for "Black Granite" dimension stone (Wood, 1974). No current or historic uses for the Monserate Mountain gabbro have been identified, based on review of available literature (Weber, 1958, CGS, 1997-1998). Based on our visual observation, the gabbro is moderately to deeply weathered and decomposed, as the terrain is generally subdued and larger boulder-sized outcrops are relatively rare. Geotechnical reports for the adjacent site (Geocon, 2006) also indicate that this material is weathered to depths of 20 to 30 feet in areas and contains a significant amount of fine-grained material (clay, silt, and fine sand).

3.4 Mineral Resource Potential

As mandated by the Surface Mining and Reclamation Act of 1975, the California State Mining and Geology Board classifies California mineral resources with the Mineral Resource Zones (MRZ's) system. These zones have been established based on the presence or absence of significant sand and gravel deposits and crushed rock source area, e.g., products used in the production of cement. The classification system emphasizes Portland Cement Concrete (PCC) aggregate, which is subject to a series of specifications to ensure the manufacture of strong durable concrete. The following guidelines are presented in the mineral land classification for the region (CGS, 1982 and 1996b).

- MRZ-2 - Areas where adequate information indicates that significant mineral deposits are present or where it is judged that there is a high likelihood for their presence.
- MRZ-3 - Areas containing mineral deposits, the significance of which cannot be evaluated from available data.
- MRZ-4 - Areas where available information is inadequate for assignment to any other MRZ zone.



3.4.1 MRZ-2 Mapped Areas

The extent of zones classified as MRZ-2 in the vicinity of the Campus Park site are identified on the Figures 2 and 6 (Rear of Text). It generally corresponds with the east-west trending to the San Luis Rey River drainage area which is primarily off site. The MRZ-2 does underlie the alignment of SR-76 along the southerly boundary of the site. This material includes a relatively thick accumulation of alluvial deposits, with an irregular, organic boundary defined by the low-lying topographic drainage margin. Geologically, this area is generally characterized by the presence of younger (Quaternary-aged) river channel, floodplain, and terrace deposits that have been eroded from the older (Tertiary to Cretaceous-aged) bedrock units, transported, and re-deposited. They consist of naturally loose mixtures of sands and rounded gravels.

The greater San Luis Rey River Valley has been identified as a resource area contains an estimated 1.6 billion tons of sand and 1.2 billion tons of coarse aggregate through the 14,607 acre drainage basin (CGS, 1982). The Campus Park site is located northwest of what are identified as Sectors C and D of the San Luis Rey Resource area (Figure 6). Sector C comprises the middle reaches of the San Luis Rey River Channel which includes Bonsall eastward to less than 1 mile east of the Interstate 15, covering about 2,160-acres. Sector D is a 3,740 acre area mapped between the Pauma Valley on the upstream end, to the Interstate 15/Highway 395 corridor on the downstream end. The DMG has estimated 990 million tons of quality (PCC Grade) aggregate resources in Sectors C and D, including 660 million tons of sand and 330 million tons of gravel (CGS, 1982).

Because the MRZ-3 mapped active alluvial (younger) areas are correlative geologically to MRZ-2 mineral resources (Sectors C and D), they are considered as such for this report and are shown as "Younger Alluvium" on Figures 2 and 6.

- Fenton Sand Mine

A short distance southwest of the Campus Park site is the Fenton Sand Mine which originated as a 27 acre sand mine initially permitted in 1969 (Chester, 2000). In 1975 a 30-year Major Use Permit (74-088) was granted to allow extraction from an expanded 211-acre area. It was operated by the H.G. Fenton Company (CGS, 1983) through November of 1998, when Hanson Aggregates assumed responsibility of the operation. They continued to mine and process sand and gravel from the 10331 Pala Road address through 2000. The discovery of endangered species in areas bordering the operation, including the Arroyo Toad, the Least Bell's Vireo, and the Southwestern Willow flycatcher, evidently limited Hanson's ability to expand the mine (Chester, 2000). Hanson closed the sand and gravel processing plant as of September 15, 2005 (CRWCCB,



2006). Although the plans for long-term usage of the site have been debated, the site does include a 207-acre conservation easement established by Hanson in accordance with their Clean Water Act Section 404 permit. The site has therefore been adopted back into the San Luis Rey fluvial ecosystem as overseen by the U.S. Fish and Wildlife Service, the Army Corps of Engineers, and the California Department of Fish and Game.

- Pankey Pits

The closest known historical aggregate extraction operation is located to the southeast of the site, closer to the San Luis Rey River. This property was originally known as the Pankey Pits, where the Marron Brothers extracted sand and gravel from the San Luis Rey river drainage (CGS, 1983). Like many in-stream operations, permitting processes and regulations became increasingly difficult, and the site was entirely inactive by the early 1990's (CGS, 1996). However, an adjacent parcel known as the Pankey Ranch was acquired by Palomar Aggregates in 1997.

- Pankey Ranch/Rosemary's Mountain

In the late 1980's Palomar Grading and Paving acquired a lease on the Pankey Ranch, an elevated hillside immediately north of the Pankey Pits historically operated within the San Luis Rey River. The approximate 100-acre site is a small peak known as Rosemary's Mountain, ranging in elevation of approximately 300 to 990 feet (Figure 6). In 1989, Palomar submitted a petition to the State of California Division of Mines and Geology for a reclassification of the MRZ-3 zoned property to MRZ-2. Based on data provided by Palomar, and confirmed by the CDMG Staff, aggregate from the site met the published Caltrans Standards for Portland cement concrete, asphaltic concrete, base, and sub-base. The mixed aggregate resources demonstrated far exceeded the minimum threshold value of 9.2 million 1988 dollars established by the SMARA and the petition was granted by the State Division of Mines and Geology (CGS, 1989).

The Granite Construction Company has since partnered with Palomar on the project, and a Major Use permit has been obtained. Plans for the rock crushing, extraction of aggregate and operation of an asphalt plant on 38 acres of the 94-acre site are in progress. The operation also includes plans for the improvement/widening of the Pala Road (SR-76). The exact status of the operation is unknown at the time of the production of this



report; however, the widening of the SR-76 is evidently underway (NC Times, 2007b).

3.4.2 MRZ-3 Mapped Areas

Site specific laboratory testing has not confirmed the physical and chemical characteristics of the onsite alluvial deposits. However, PCC-grade aggregate, successful sand and gravel mining operations are well documented along the San Luis Rey River, drainage in the designated MRZ-2 areas. Documented historical aggregate extraction operations are identified on Figure 6 and all but one (the Pankey Ranch/Rosemary Mountain site) has been terminated when the operators were no longer able to obtain a permit due to environmental constraints.

Portions of the Campus Park site and immediately surrounding area are mapped as MRZ-3 by the California Geological Survey and explanation is provided below (CGS, 1983 and 1996). In contrast to MRZ-2 areas where it has been judged that there is a high likelihood of minable, marketable mineral deposits (notably Portland cement and asphaltic concrete aggregate), MRZ-3 areas are areas where the data is not sufficient to evaluate the significance of any potential aggregate deposit. According to explanations presented by the California Division Mines and Geology (CGS, 1982) geologic formations or deposits that do not or have not been utilized for aggregate commonly do not have test data and studies are not available. Such areas mapped as MRZ-3 include a wide variety of areas across all of San Diego County.

The western portion of Campus Park Property contains geologic formations mapped as MRZ-3, because these units are in general, more weathered, contain more fines and are less minable and marketable than adjacent known deposits. In addition, the weathered mafic granitic rocks of the Campus Park hillsides and the older alluvial terrace deposits on the lower plain are differentiated from adjacent areas known to be MRZ-2, such as the San Luis Rey alluvium, as well as the leucocratic granodiorite comprising the adjacent Rosemary's Mountain.

In summary, the majority of the Campus Park property is not underlain by geologic units traditionally known as desirable, marketable sources units of sand or aggregate suitable for asphaltic concrete or Portland Cement Concrete. However, the area near the existing SR-76 is underlain by younger alluvium of the San Luis Rey drainage and can be considered to be correlative with the alluvium identified as MRZ-2 in Sectors C and D to the south. This area is currently proposed to remain as open space.



4.0 MINERAL RESOURCE IMPACT ANALYSES

4.1 Methodology for Determination of Significance

Considering the site characteristics described above, their significance is measured against the County of San Diego Department of Land Use Guidelines (DPLU, 2007). These are based on the State CEQA Guidelines, and establish a measurable standard for determining when an impact will be considered significant pursuant to CEQA.

4.1.1 Marketability and Minimum Dollar Value

Portions of the Campus Park project are situated on areas classified as MRZ-3. The acreage generally includes the westerly portions of the site and encompasses approximately 284 acres. The area mapped as Qa on the Regional Geologic Map (Figure 5) and proposed as open space is mapped as MRZ-3 but could possibly be considered generally similar in composition to the San Luis Rey River areas mapped as MRZ-2. This area is approximately 105 acres and has been assumed to be MRZ-2 material for this report.

4.1.2 Land Use Compatibility

With regard to land-use compatibility, we first looked at what existing onsite or offsite uses are present that currently impact the proposed land use and the feasibility of a mining operation. Secondly, we looked at what resource areas may be impacted in the future by the proposed development if they are within a 1,300 foot buffer zone. The remaining guideline for significance determination involves whether or not the deposit is minable or compatible with the present conditions. In order to be minable, it must be considered compatible with existing land uses.

As shown on Figure 4, surrounding land uses include the Rosemary's Mountain to the east and south, and the residential communities and recreational facilities to the west. The Campus Park property overlooks the Interstate 15 Corridor. In general land usage up the SR76 route to the east is generally rural (with a few scattered residences). There are also the existing nurseries, agricultural plots, and the past sand mines in the upper San Luis Rey drainage (Figure 6). To the south and west by contrast, residential usage predominates, with both existing as well as proposed developments. For example, developments such as Meadowood and the Palomar Community College District and Campus Park West have been identified in the near term planning adjacent to the site. The Pala Mesa golf club and resort is situated opposite the site. In addition, the proposed Horse Ranch Creek Road



and other planned regional roads which will be built by others will bisect the Campus Park in a north south direction.

Based on cursory review of Environmental Impact Studies performed for the Rosemary's Mountain operation, specific conditions made the Rosemary's Mountain site suitable as a quarry site. These include location on the east-facing flank of Rosemary's Mountain, essentially shielding it from the view and impacts to the Pala Mesa resort and Interstate 15 corridor. The Campus Park Property is more akin to the Pala Mesa resort, well exposed within clear site and view shed of surrounding areas.

Based on the County of San Diego Guidelines, 1,300 feet has generally been considered the buffer from residences necessary to achieve adequate separation from noise, dust and other characteristics generated by aggregate extraction and processing. Figure 7 also includes a 1,300-foot buffer shown in cross hatching from the existing adjacent residential development. Areas on the Campus Park site that are within this 1,300 buffer zone are also not suitable for reclamation.

4.2 Conclusions

4.2.1 Significance of Impacts

Actual MRZ-2 material on site is limited to the area that underlies the SR-76 alignment and as a result has already effectively been lost. Other MRZ-2 deposits that are off site are also essentially lost because they are within 1,300 feet of existing residential properties as shown on Figure No. 7. The area within the site that has been assumed to be of MRZ-2 quality consists of approximately 105 acres. Of this area approximately 97.2 acres have already been essentially lost because they are within 1,300 feet of existing residential properties with two areas that combined total 7.8 acres of assumed MRZ-2 material that is potentially recoverable. The data regarding the MRZ-3 material to the north is not sufficient to confirm that it is of sufficient quality to warrant extraction. The areas identified as Older Alluvium/Terrace Deposits have been investigated on the adjacent parcel by others (Geocon, 2006) and been found to contain "over 60 feet of medium-dense to dense reddish brown silty to clayey fine to coarse sand." Because of the fine-grained nature and weathered condition of this material it has not been a suitable candidate for extraction on other similar properties. The remainder of the site is underlain by the San Marcos Gabbro and this material is also highly weathered as evidenced by the subdued topography and lack of boulder outcrops. Again where investigated by others on the adjacent site (Geocon, 2006) this material is deeply fractured and weathered to depths of 20 to 30 feet. Also as noted above because of the lack of siliceous minerals, this unit weathers to a fine grained soil typically not a candidate for extraction.



In conclusion, because of the very limited amount of MRZ-2 material on the site there is not sufficient available resources to meet the level of significance for mineral resources in the sites existing condition. There are adjacent offsite deposits of MRZ-2 quality material that are within 1,300 feet of the proposed development; however, there are already existing offsite residential properties for which a 1,300 foot buffer again already eliminates the potential for possible future extraction of these areas. The two areas which remain include one of 1.3 acres and another of 6.5 acres (Figure 7). In order to evaluate the significance of the 7.8 acres of assumed MRZ-2 material within the site that is potentially recoverable, we have assumed a potential depth of recovery of 20 feet due to probable groundwater constraints. With these conditions, the value of this material is approximately eight-million dollars which is well below the County's threshold value of fifteen million dollars (15,000,000.00) and as a result, is not considered a significant impact.



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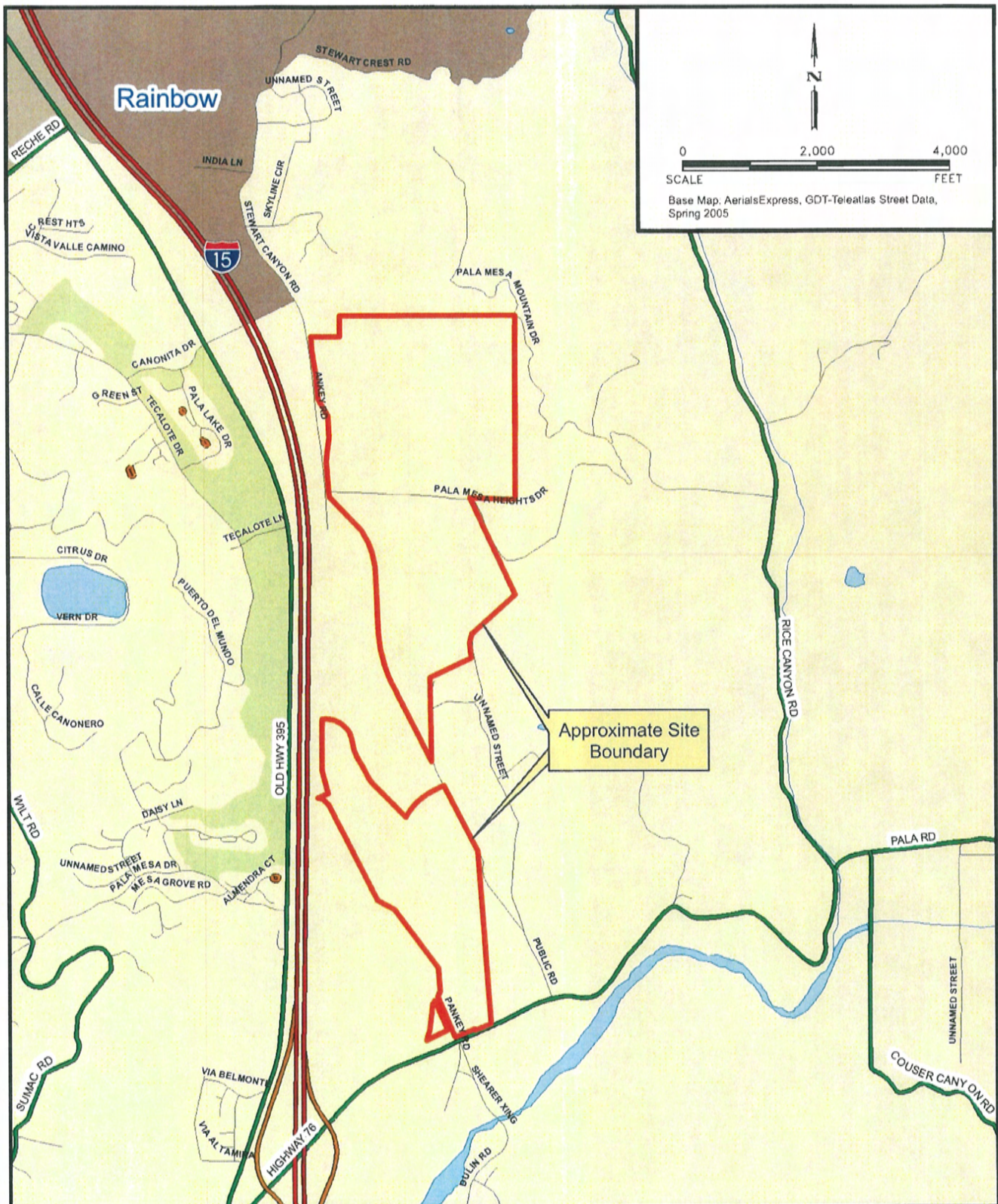
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Aerial Photographs

Date	Source	Flight/Scale	Photo No(s)
5/17/2006	Aerials Express	Digital Files	N/A





Passarelle Campus Park
Project and Surrounding Area
Fallbrook Area, Unincorporated
San Diego County, California

SITE LOCATION MAP

Project No.
042343-001

Date
June 2008



Figure 1



LEGEND

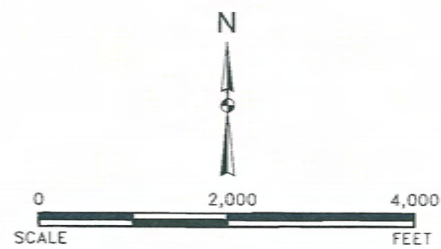
Surficial Units

- Qa** Active alluvial flood plain deposits (late Holocene) - Unconsolidated to locally poorly consolidated sand and gravel deposits in active alluvial flood plains.
- Qoa** Older alluvial flood plain deposits (Pleistocene, younger than 500,000 years) - Mostly moderately well consolidated, poorly sorted, permeable flood plain deposits.

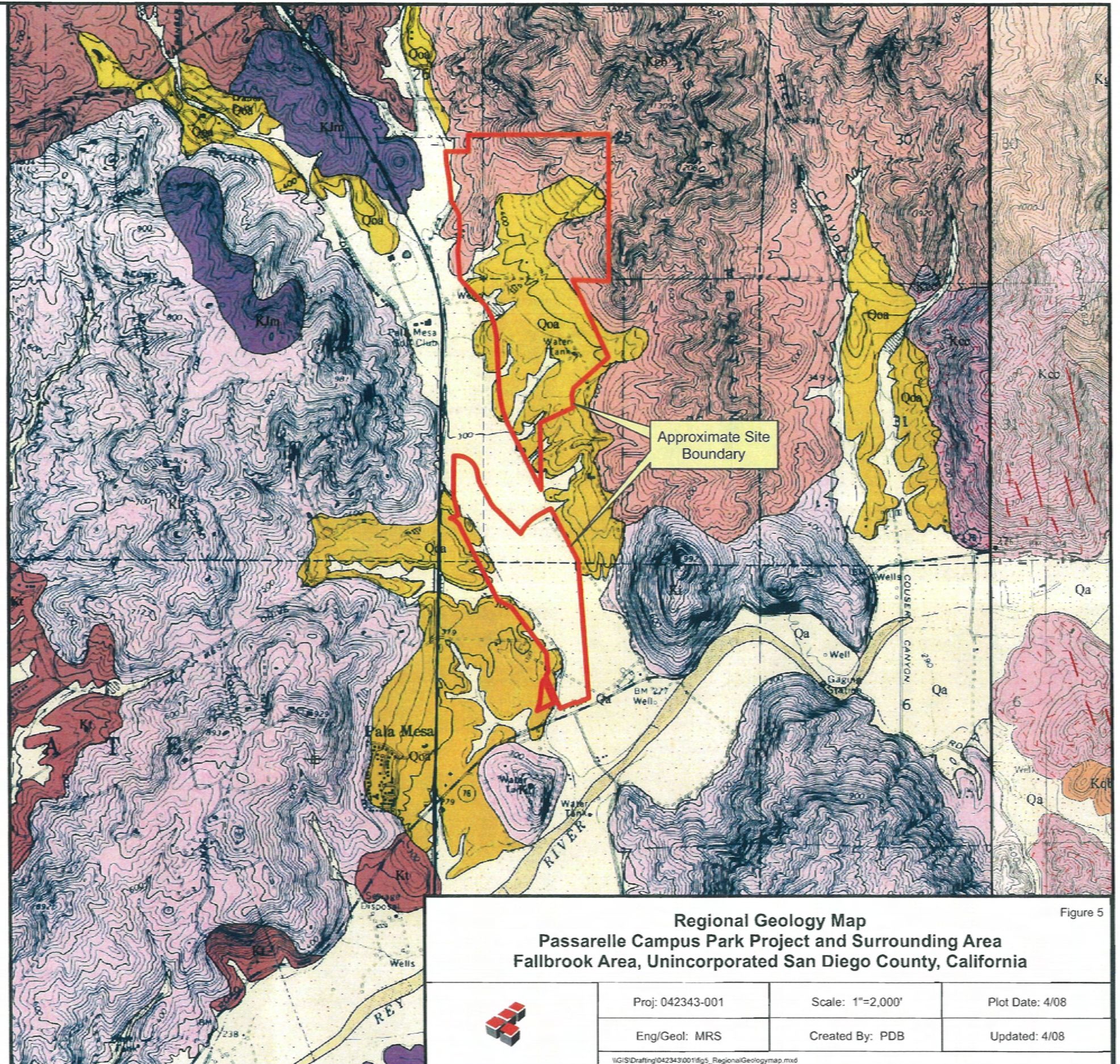
Bedrock Units

- Ki** Granodiorite of Indian Mountain (Cretaceous) - Biotite leucocratic granodiorite; white, fine to medium grained and massive.
- Kt** Tonalite undivided (Cretaceous) - Mostly hornblende-biotite tonalite; coarse grained, light gray.
- Kgb** Gabbro undivided (Cretaceous) - Mostly biotite-hornblende-hypersthene gabbro; coarse grained, dark gray massive.
- KJm** Metavolcanic and metasedimentary rocks undivided (Cretaceous and Jurassic) - Low grade (greenschist facies) rocks that are in part coeval with and in part older than the Cretaceous plutonic rocks they lie in contact with.

Pegmatite dike



Base Map: CGS Preliminary Map Series; Geologic Map of the Bonsall and Pala Quadrangles (Kennedy 2000a and 2000b)



Regional Geology Map
Passarelle Campus Park Project and Surrounding Area
Fallbrook Area, Unincorporated San Diego County, California

Figure 5



Proj: 042343-001

Scale: 1"=2,000'

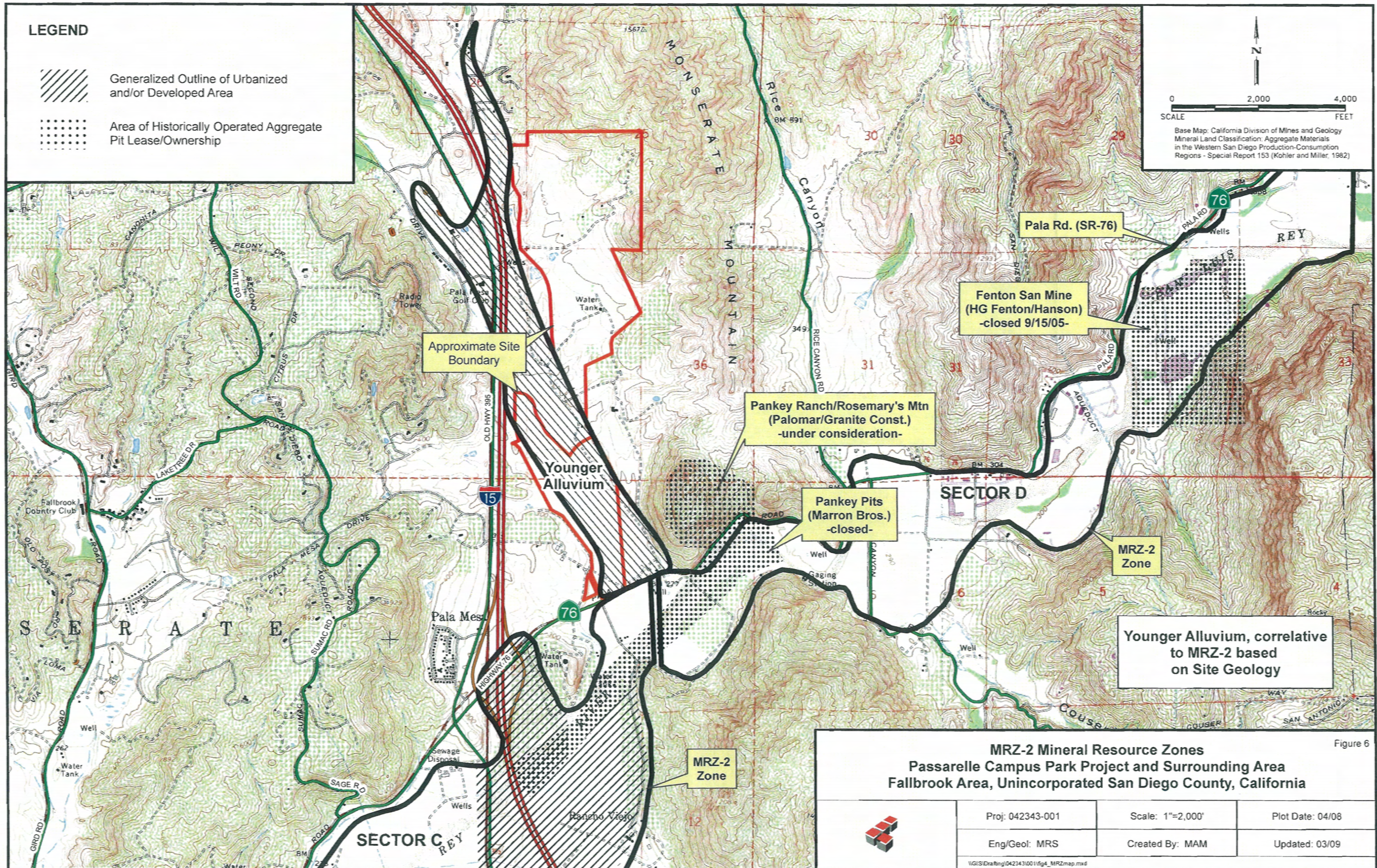
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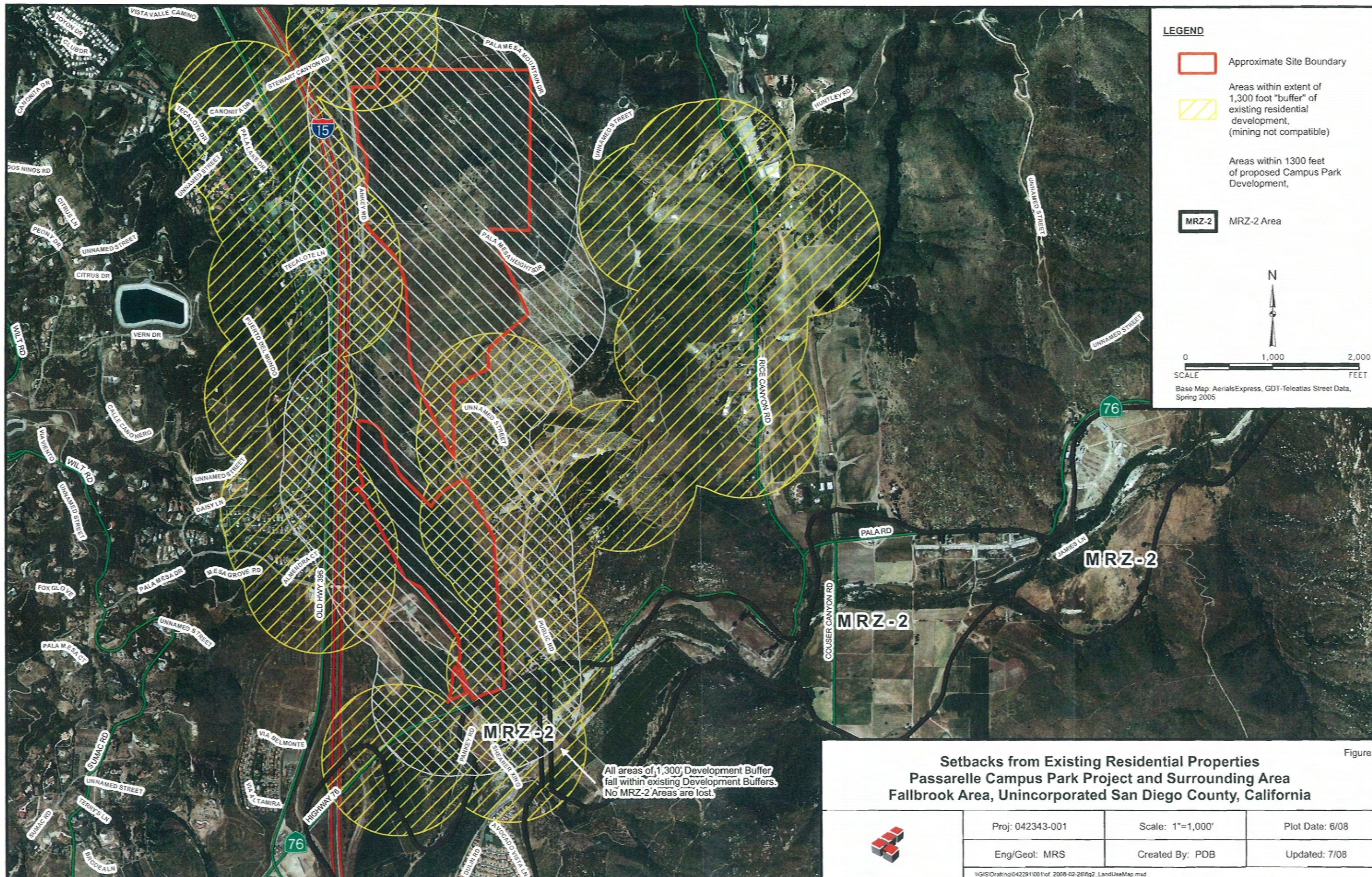


Figure 7